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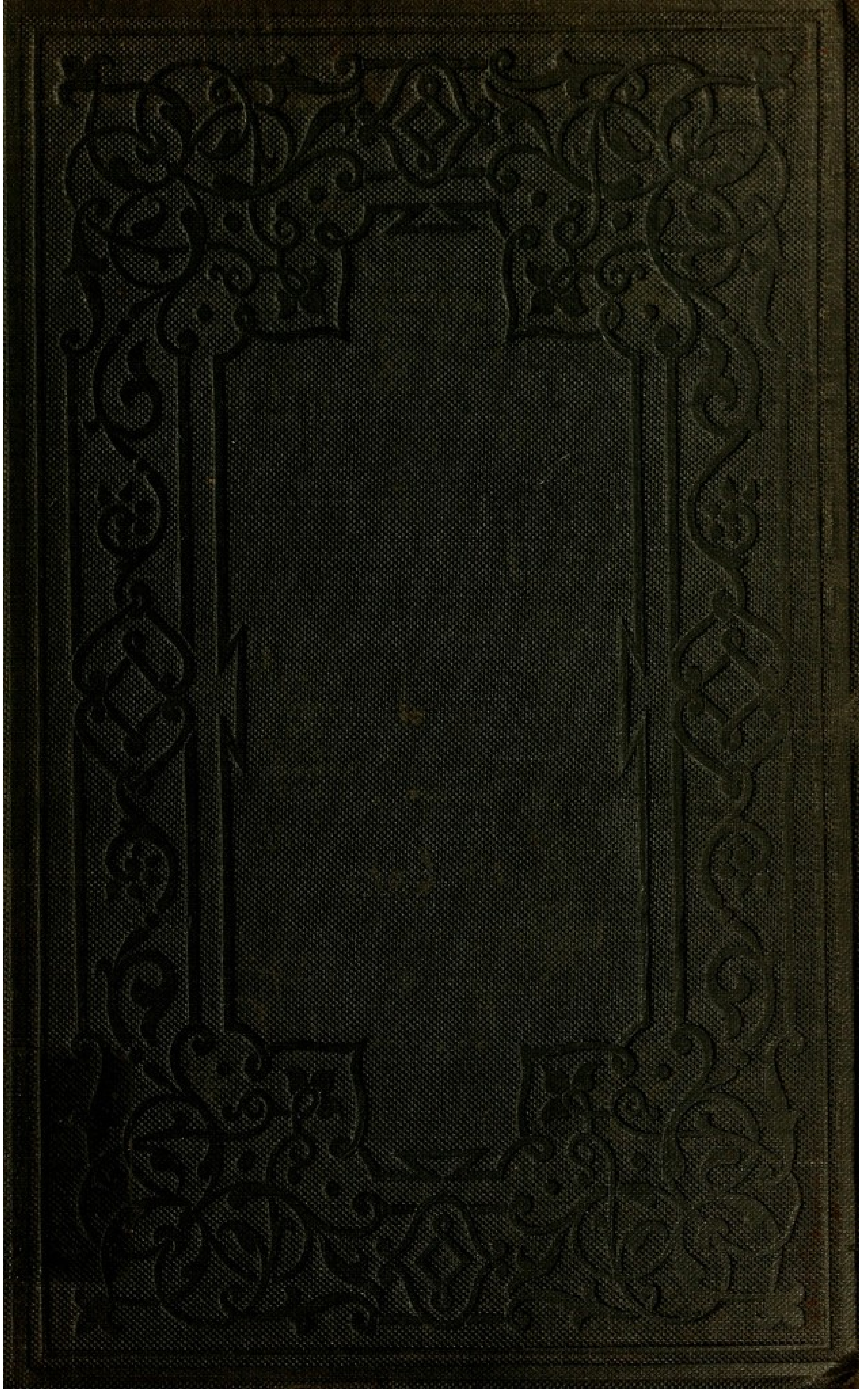

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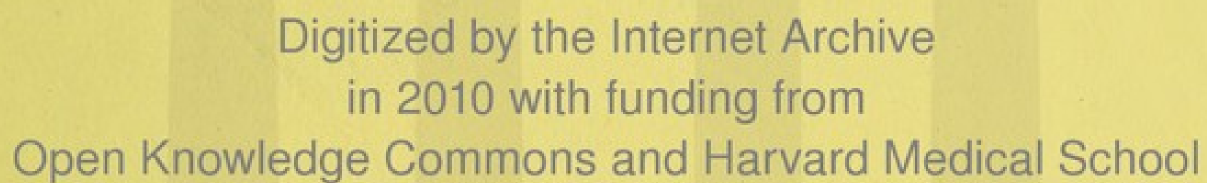
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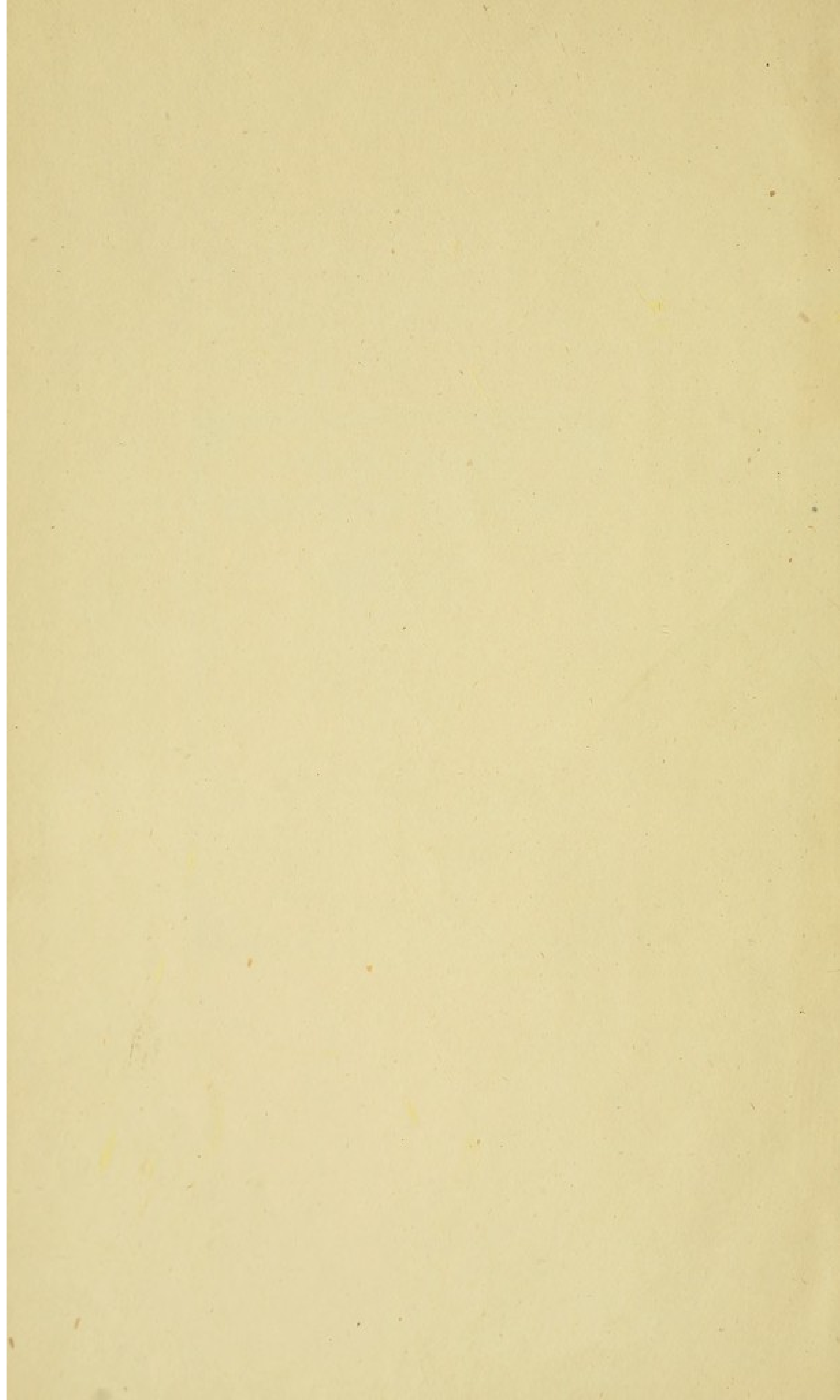

ON

DISEASES OF WOMEN

AND

OVARIAN INFLAMMATION.

"Multum egerunt qui ante nos fuerunt, sed non *peregerunt;* multum adhuc restat operis, multumque restabit; nec ulli nato post mille sœcula prœcluditur occasio aliquid adhuc adjiciendi."

SENECA.

ON

DISEASES OF WOMEN

AND

OVARIAN INFLAMMATION,

IN RELATION TO

MORBID MENSTRUATION, STERILITY, PELVIC TUMOURS, AND AFFECTIONS OF THE WOMB.

BY

EDWARD JOHN TILT, M.D.

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Second Edition.

"OMNE VIVUM AB OVO."

LONDON:
JOHN CHURCHILL, PRINCES-STREET, SOHO.
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PREFACE.

THERE are few things so gratifying to an author as to be called upon to write the preface of a second edition; the fact brings with it the assurance that his past labours have been useful, and gives the hope that additional improvements may also be favourably received.

Discoveries in physiology always precede and suggest improvements in medical practice; and if the first edition of this work met with a success beyond the author's most sanguine expectations, it may partly be ascribed to the circumstance that within the few years preceding its appearance, in 1850, discoveries had been made in the physiology of the ovaries of sufficient importance to excite a more than ordinary interest in a work having for its object the connexion between the recently-discovered functions of these organs, and the principles which should guide us in the treatment of their diseases.

In re-writing this work, it has been the author's object not only to improve it by personal observation, but to add whatever of value has been contributed by unexceptionable authorities of this and other countries. In the preface to the first edition it was remarked "that an essay on the natural history of woman was the only rational introduction to any treatise on the diseases of women." In the present edition the author has endeavoured to explain his assertion; and his results will perhaps be received as affording a more satisfactory explanation than has hitherto been given of the manifold influences of morbid menstruation in the production of other diseases of women.

In pursuing laborious investigations he has sought to guard against that over early and peremptory reduction of facts into systems which Lord Bacon has so justly condemned; but, while giving due importance to facts and theories which have been clearly *ascertained*, those that are *probable* or even *possible* have not been neglected; for in discussing abstruse subjects, to set down merely what is thoroughly known, is to fossilise an inquiry in its early growth. What branch of science does not owe the solution of important problems to the observative and reflective faculties of the learned having been awakened even by the crude questionings of the uninformed?

In submitting this new edition to the profession, the author may, perhaps, be permitted to express a conviction that the importance of the subjects it embraces are not yet fully understood, though they are amongst the most interesting of those which come within the range of medical science.

11, YORK-STREET, PORTMAN-SQUARE,
February 15th, 1853.

PREFACE

TO THE FIRST EDITION.

It is not without some degree of diffidence that I venture to add even a small volume to the number of those which overload medical shelves, for I feel that the flattering reception of an ephemeral production * offers no guarantee of similar success for a work addressed to the profession on the treatment of important diseases. Urged, however, by a conviction that books are not only useful to diffuse the knowlege of great discoveries, but also to connect those facts which, although steril so long as they are left disjointed, assume importance when connectedly put together, I have here more methodically arranged, and more fully developed, views first expounded in a series of papers on the sub-acute form of ovarian disease, which appeared in the *Lancet* in 1849.

I am further induced to do so, because those contributions were favourably noticed in various organs of the medical press,† and also on account of the gratifying concurrence in my views which has been spontaneously offered to me by many of my brethren engaged in practice.

Perhaps it would not be unbecoming for me to state, that whether as pupil or house-physician to the Paris hospitals, I have, from the beginning of my career, enjoyed the full advantages of the widest field for uterine investigations which can ever be afforded by a medical school; and that whilst practising in Paris and in various other capitals of Europe, I not only had abundant opportunities of testing the value of my views relative to diseases of menstruation, but also of

* *The Serpentine* AS IT IS, *and* AS IT OUGHT TO BE; *and the Board of Health* AS IT IS, *and* AS IT OUGHT TO BE. 1848.

† *Edinburgh Monthly Journal*, 1849; Dr. Ranking's *Retrospect*, January and June, 1849; Braithwaite's *Retrospect*, January and June, 1849; *American Journal of Medical Science*, vols. XLIII. and XLIV.; *London Journal of Medicine*, December, 1849.

strengthening them by an acquaintance with the practice of those who so well represent our profession in each country.

I might even add, that since my return to England I have found abundant opportunities of confirming my peculiar views on the diseases of menstruation, while attending the numerous patients at the Farringdon General Dispensary and Lying-in Charity, and also those of the Paddington Free Dispensary for Diseases of Women and Children, to which institutions I am attached in the capacity of Physician.

My aim has been to perform, for the ovaries, the principal organs of menstruation, what has been successfully done for other organs by many eminent men, and I feel assured, that although some of my deductions may be contested, my practice will be admitted by all to be indubitably safe, and necessarily destined to diminish the number and intensity of female complaints.

I can lay claim, *unfortunately*, to no discoveries; but from an acquaintance with the literature of that branch of the profession to which I have devoted my chief attention, I feel justified in affirming that in no other work will the reader find so complete an account of the various ways in which sterility is produced by the action of inflammation on the ovarian tissues, of the great importance of ovarian peritonitis as a cause of disordered menstruation, or of the influence of ovarian inflammation in the production of uterine disease—facts forcibly exemplified and proved to be, not mere conventional possibilities, but events of frequent occurrence.

I must also observe, in reference to the numerous cases with which I have enriched my work, that I have given them more with a view of illustrating, than of establishing, each particular point of ovarian pathology. I have therefore taken from my own case-book only those select cases which bear forcibly on the subject, borrowing from authors and contemporary observers, facts, rendered much more valuable by their not having been collected under the influence of the views which they will be found so admirably to exemplify. If I have derived my cases more from foreign than from British practitioners, it is simply because Continental obstetricians, having been the first to investigate scrupulously the diseased organs of generation by the combined assistance of the touch and of the eye, have been able, in many instances, to detect the hidden causes of those dis-

eases which, until late years, were only guessed at, and could only be treated symptomatically.

As a fitting introduction to this work, I intended to prefix an essay on the natural history of woman, but finding the matter to grow rapidly under my hands, and the vast importance of the undertaking becoming every day more perceptible, I have, for a time, desisted from the accomplishment of what must be considered the only rational introduction to any treatise on the diseases of women.

In noticing the many deficiencies of this work, the reader will also remember that it is the first systematic attempt to do, for the principal organs of generation in women, what has now been done for every other important organ of the body, and that, considering the rapid progress which has lately been made in ovarian physiology, it cannot be wrong if some one should seek to give to the pathology of the ovaries a development which would be greater and more satisfactory if the labourer were better able to accomplish his self-imposed task.

I cannot record the progress of ovarian physiology without testifying my admiration for the illustrious Regnerus de Graaf, who, nearly two centuries since, originated a movement which has only been followed up within the last few years. Can I better conclude this address than by borrowing the words in which he ends the preface to his immortal work?

" *Vale itaque amice, Lector, atque conatus meos non sine labore et sumptu adornatos, tibique gratis oblatos, candido et benevolo (quo illos conscripsimus) animo, castoque pervolve.*"

EDWARD JOHN TILT.

11, YORK-STREET, PORTMAN-SQUARE,
March 25th, 1850.

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CORRIGENDA.

Read Chambou *for* Champier, page 87.
Read Oil of Savin *for* Tincture of Savin, page 92.

OBSTETRIC SCHEDULE.

DATE......

NAME......

DISEASE......

Age..................
Temperament...
Height ....
Weight ....
Country ....
Came to Town...
Address............
Station ....
Circumstances
CHILDREN ALIVE AT CESSATION. Male ....
CHILDREN ALIVE AT CESSATION. Female ......

VIRGIN LIFE.

Date of First Menstruation.	Prodroma of, and Diseases at First Menstruation.		Date of its Regular Flow.	Symptoms of Menstruation.	Frequency.	Duration.	Quality.	Regularity of Menstrual Flow in Summer and Winter.	Date of Last Menstruation.	Symptoms of, and Diseases after Cessation.	
	Length of Prodroma									Length of Dodging Time	
—	Cephalalgia .... Sick-headache .... Pseudo-narcotism... Hysteria		From Month	Cephalalgia .... Sick-headache .... Pseudo-narcotism...... Hysteria	Every Week	From Days	Dark Bright with Clots Sometimes	Regular knew it to miss before Marriage		Cephalalgia .... Sick-headache .... Pseudo-narcotism... Hysteria	
	Spinal Pains .... Pains in Limbs ...... Hypogastric Pains..			Spinal Pains .... Pains in the Limbs.... Hypogastric Pains ..... Pains in Breasts.........						Spinal Pains .... Pains in Limbs ...... Hpyogastric Pains	
	Very little Flow...... Medium Flow......... Menorrhagia			Very little Flow......... Medium Flow............ Menorrhagia						Menorrhagia .... Gradual diminution Sudden Stoppage ...	
	Leucorrhœa			Contiguous Leucorrhœa .... Inter-menstrual Leucorrhœa						Frequency of Flow Duration of Flow ...	
	Fainting .... Impaired Nutrition Chlorosis			Chlorosis .... Turbid Urine .... Relaxed Bowels.........						Faintings .... Flushes .... Perspirations .... Skin Diseases .... Uterine Diseases.... Leucorrhœa........... Diarrhœa .... Piles......................	
	Other Diseases			Other Diseases							

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Dates of Marriages.	Influence of Connexion on the Phenomena of Menstruation.		Dates of First Conceptions after Marriages.
—	On the Cerebral Symptoms		
	On the Spinal Pain On the Hypogastric Pain		
	On the Sanguineous Flow .... On the Mucous Flow		
	On the Duration of Menstruation		
	On its Frequency ... On its Regularity ...		
	On the Nutritive Functions		

PHENOMENA OF PARTURITION IN RELATION TO MENSTRUATION.		Re-appearance of Menstruation after these Phenomena.	Dates of Last Conceptions.
Conceptions, and if at Menstrual Periods..................	Checked Menstrual Flow		
Abortions, and if at Menstrual Periods..................	From Between Months	At the end of Week	
Labours, and if at Menstrual Periods..................	At full Time. {M. F. S.-B. {M. F.	At the end of Week	
Bad Labours, and their Effects on Menstruation...		At the end of Week	
LACTATION. Length of Lactation....	Months		
LACTATION. Symptoms of Lactation	Faintings Flushes Perspirations		
LACTATION. Prevention of Menstrual Flow	Till the Month Till Weaning		
LACTATION. Prevention of Impregnation	Till Month of Lactation. Menstruation not having re-appeared till Weaning	At the end of Week	
Effects of Menstrual Flow or of Monthly Periods on the Flow of Milk..............................	Unaltered Spoiled Diminished Augmented at each Epoch Augmented after each Epoch		

Influence of Parturition on the Phenomena of Menstruation.	
On the Cerebral Symptoms	
On the Spinal Pain On the Hypogastric Pain	
On the Sanguineous Flow .... On the Mucous Flow	
On the Duration of Menstruation	
On its Frequency ... On its Regularity ...	
On the Nutritive Functions...........	

To face p. xvi.

"Instauratio facienda ab imis fundamentis."—BACON.

"Il n'y a rien de plus difficile que de constater des faits, on s'epargnerait une foule de disputes si on commencait par là."—LAMENNAIS.

"Quant on observe on doit noter avec autant de soin ce qui n'est pas, que ce qui est; les faits négatifs que les faits positifs."—MARC DESPINE.

INTRODUCTION.

"Our ignorance of ovarian inflammation is one of the strongest proofs that can be given of the little attention uterine pathology has received."—*British and Foreign Medical and Surgical Review, January,* 1850.

MEDICAL libraries are stored with works on diseases of Menstruation, and most of them are valuable for the history of medicine. Many of them show that, notwithstanding the difference of medical terms, the principles by which we are now guided have been handed down from remote antiquity, but few of these works form useful guides for practice. Their comparative inutility does not depend upon the inferiority of their authors, who were at least as talented and laborious as those of the present day, but who were in ignorance of the paramount importance of the ovaries in the process of menstruation, a discovery of modern physiologists which has already thrown some light upon the pathology of menstruation. It is generally admitted that pathology and physiology are inseparable, and the female organs of generation afford, perhaps, the best illustration of the axiom. Those who do not feel disposed to admit that the ulceration of the ovarian stroma previous to the dehiscence of the ovule sometimes passes into inflammation, will own how difficult it is to say when the pains attendant on menstruation cease to be physiological, and become morbid, so as to require treatment. For the clear conception of our views it will be indispensable to refer to the physiology of the female organs of generation. This we shall do in another chapter, for it is obvious that an imperfect knowledge of the phenomena of menstruation will lead to imperfect views of the diseases of menstruation, and hence the absence of minute investigation into the female organs of generation necessarily led the older authors to an imperfect knowledge of their morbid conditions, and to a pathological confusion, evinced by the existing nomenclature of diseases of women, which we have received.

On inquiring into the real meaning of the terms still used to express diseases of menstruation, such as AMENORRHŒA, DYSMENORRHŒA, MENORRHAGIA, LEUCORRHŒA, and HYSTERIA, we find that AMENORRHŒA either implies—

Absence of organs of ovulation, their destruction, their chlorotic arrest of development;

Sub-acute or acute ovaritis;
Or it may represent the inflammation, or the obliteration, of the Fallopian tubes;
Undersized womb;
Inflammation of the womb;
Its induration—*J. P. Frank;*
Retroversion of the womb—*Dr. Rigby;*
Morbid stricture, or obliteration of the neck of the womb;
Ulceration of the neck of the womb—*Dr. H. Bennet;*
Or the organs of reproduction may be perfect, but, under the influences of various acute and chronic diseases, the menstrual flow may be impeded or suppressed.

DYSMENORRHŒA either indicates—
An undersized womb;
Deviations of the womb;
Inflammation of its body, or of the inner surface, producing false membranes;
Stricture of the neck of the womb;
Its induration;
Ulceration of the neck of the womb in nearly all extreme cases—*Dr. H. Bennet;*
Cancerous affections of the neck of the womb;
Coarctation of the vagina;
And constitutional diseases, such as a rheumatic or gouty habit—*Dr. Rigby;*
Sub-acute ovaritis;
Ovarian peritonitis;
Effusion of the ovum and menstrual blood into the peritonæum;
Tubal inflammation and partial obstruction, with flow of blood into the peritonæum;
A neuralgic ovarian affection.

MENORRHAGIA represents either—
Uterine catarrh;
Cancerous affection of the womb;
Ulceration of the neck of the womb in nearly all cases—*Dr. H. Bennet;*
Retroversion of the womb;
Irritable uterus;
Sub-acute ovaritis;
A neuralgic affection of the ovaries.

LEUCORRHŒA stands either for—
Chronic catarrh of the Fallopian tubes—*Rokitansky;*
Uterine catarrh;
Hypersecretion of the mucous follicles of the neck of the womb in most cases—*Dr. Tyler Smith;*
Ulceration of the neck of the womb in most cases—*Dr. H. Bennet;*
Various inflammations of the vagina or external organs in most cases—*Lisfranc.*

Thus the same terms have been made to express very different morbid conditions.

The words AMENORRHŒA, DYSMENORRHŒA, MENORRHAGIA, and LEUCORRHŒA, then, cannot be received as meaning substantive diseases, because vague and injudicious treatment would spring from vague and general terms. Such words can only be applied in an adjectival sense to point out the different morbid conditions of the organs of generation, which produce in so many different ways the diseases of menstruation.

This is no idle question of words, for any practitioner well acquainted with the history of medical science will admit the "mighty governance of names," and it should be the aim of all writers to withstand, as much as possible, the encroachments of language on the reality of facts, and to abstain from using terms which may fetter the understanding and lead to erroneous notions and hap-hazard practice. If taxed with exaggeration, we would refer our readers to Sir C. M. Clarke, who says, in his well-known work, vol. ii., p. 37:—"On no subject, perhaps, have there been more erroneous notions entertained, or more injurious directions given, than on that of diseased menstruation. Prejudice has occupied the place of Science, and a popular nostrum has been exhibited, often without, and sometimes with, the concurrence of the practitioner." As, therefore, it is owing to the erroneous notions conveyed by vicious denominations that the treatment of diseases of menstruation has been often either "the whip and spur," or else complete inaction, we shall attempt to give greater precision to common language by using only the terms Amenorrhœa and Dysmenorrhœa, &c., when from the impossibility of finding out any organic reason to explain the menstrual perturbation they indicate, such a condition may be considered *essential* and depending upon some unseen modification of the nervous influence presiding over the menstrual function.

Turning from diseases of menstruation to diseases of the ovaries, it is evident that a perusal of the works of old authors throws little light upon a subject confessedly beset with greater difficulties than any other part of pathology. The discovery of the real function of the ovaries alone enabled us to collect on all sides facts hitherto little noticed or unexplained—the *disjecta membra*, into which, in a first edition, we attempted to infuse life by placing them side by side so that they might explain each other. In the opinion of almost all those who have alluded to the subject in their writings, as well as in that of the generality of practitioners previous to the publication of our first edition, ovaritis was supposed to be a disease only to be met with in the puerperal state, forming one of the varieties of pelvic tumours, and consisting of an extensive swelling and suppuration of the ovaries, attended by alarming symptoms of puerperal fever. The idiopathic form of acute ovaritis, first established by Montault, has since been described by others, who have brought forward cases to prove that, independently of the puerperal state, the ovaries may be acutely inflamed, and even become the seat of extensive suppuration, and thus constitute another species of pelvic tumours. It was also admitted —*pro formâ*—by some authors, that the ovaries may be affected with chronic inflammation, but they dispose of the complaint in a very

hurried manner. An excellent authority—Valleix—is indeed afraid of describing it until more precise information has been obtained.

Such is in brief what is generally admitted respecting ovaritis; but as the study of phthisis is not merely confined to the consideration of those caverns formed by the melting away of tubercular masses;—as the idea we have of pneumonia is not entirely connected with the state of the pulmonary tissues in the last stage of the complaint;—so we may safely admit that there are other forms of ovarian inflammation besides the acute form—whether idiopathic or puerperal—described by authors. This form of ovaritis has attracted most attention because it is most striking; but it will not be difficult to prove that it is the most uncommon, while the sub-acute variety, whether alone or confounded with various diseases, is of very frequent occurrence.

That the ovary, which is the *punctum saliens* of animated matter, and the mysterious source whence it has pleased the Almighty to let flow, through time, the stream of human life, should not be frequently subject to disease would be, at least, singular. It is likewise improbable that the eccentricities of civilisation, which have rendered the different organs of our frame so prone to disease, should not have also increased the ovarian disorders.

Without appealing to the testimony of the older writers, though we are far from despising authorities with which we are less conversant than with the book of Nature, we shall merely quote a few modern authors, which will prove that they were fully aware of the existence of something more than they could describe, and that they hint at, and even admit, the frequency of such forms of complaint. Thus, in his 46th letter, Morgagni says:—"If I wished to enumerate all the lesions of the ovaries and oviducts which I have seen in my dissections, this letter would be the longest of all."

Krüger, in his valuable thesis—*Pathologia Ovariorum*, Göttingen, 1782—exclaims, "How frequently have authors noticed the numerous anatomico-pathological lesions of the ovaries! But of what avails such information, if they do not describe their cause and symptoms?"

Sir C. M. Clarke asserts—vol. ii., p. 32 of his well-known work—that "Every one at all accustomed to examine dead bodies must have seen a variety of examples of disease in the ovaria, where no symptoms of such complaints were displayed in the lifetime of the patient. The author has met with large abscesses in them, and in other parts where no evidence had existed that such complaints were present."

A writer on diseases of women, says—"We can have no hesitation in believing that the ovaria and the Fallopian tubes must, for many years of female life, be the common seats of disease; and probably some of the most obscure cases occurring in medical practice belong to chronic ovaritis, especially where we cannot trace the symptoms to an acute attack." Again, Dr. Ashwell says—"Dull and heavy pains in the region of the ovary, lasting for months, are the consequence of chronic inflammation of the ovaries; I mention the circumstance because they are too often regarded as neuralgic, and treated accordingly; painful menstruation and sterility being their results." And

again: "Of all the organs of the human body, scarcely any seem so prone either to functional or organic disease as the ovaries; for I can with truth say that I have rarely, when examining these important organs after death, found them entirely healthy."—Ashwell, p. 6, third edition. Dr. Robert Lee tells us that "The adhesions between the ovaria and the Fallopian tubes being so frequently met with in examining the bodies of women of different ages and conditions, prove that slight attacks of inflammation of the peritonæal coat of the ovaria are not of rare occurrence, and that their presence is seldom discovered during life." And again, he remarks, "That in the many cases of disordered menstruation, chlorosis, and hysteria, which we have observed, the symptoms have been clearly referable to certain morbid states of the uterine appendages, and decided benefit has resulted from the application of those local remedies which were employed with the view of subduing the irritation, the congestion, or the inflammation which appeared to be present in these parts of the uterine system."—*Cyclopædia of Practical Medicine.*

In Germany, Neumann did not scruple to remark that—"Of all the organs of the human frame, none are so often affected by disease as the ovaries. Suppressed menstruation, which is a frequent cause of sterility, can generally be traced to disease of the ovaries." And J. P. Frank, a man of European celebrity, when giving an account of his travels in this country in 1806, mentions that Dr. Cheston, of Gloucester, looked upon menstrual colics as produced by inflammation of the ovaries, and adds, that on his return to Wilna, he attacked such cases by an antiphlogistic plan of treatment, and with much greater success than had formerly attended the exhibition of stimuli. But nothing can more forcibly prove either the difficulty of diagnosis, of ovaritis, or the little attention paid to its diagnosis, or, in other words, the ignorance of this form of disease, even when most to be anticipated.

Adding his testimony to that of so many others, Meigs writes: "I am persuaded that the knowledge of these important organs is vague, and that the most serious of their maladies are of a nature so invidious as to allow them to become considerably advanced and firmly established long before they are delated by the pain or inconvenience of the interrupted function to which they give rise." And a judicious reviewer observes, with great truth, that—"Our ignorance of ovarian inflammation is one of the strongest proofs that can be given of the little attention uterine pathology has received."—*British and Foreign Medical and Surgical Review, January,* 1850.

With respect to acute ovaritis, although it occurs more frequently than is generally believed, it is still less frequent than that of the puerperal. The frequency of inflammatory lesion of the ovaries was noted by Antoine de Jussieu, Albert de Villiers, and Fontaine, at the Hôtel Dieu of Paris, in 1746, and was prominently brought forward in 1781 as one of the most frequent causes of death in puerperal women, by J. George Hoffman.

The frequency of puerperal ovaritis varies according to the nature of the reigning epidemic influence, but it at all times exceeds what is

generally admitted; for if, on the one hand, Madame Boivin and Dugès only found 35 cases of ovaritis in 686 of metro-peritonitis—suspecting, however, the same disease in many other cases—Tonnellé, on the other hand, found, in 222 cases of puerperal fever, 197 cases of inflammation of the womb and of the ovaries; ovaritis was evident in 62 cases; in 4 of which it had ended in suppuration.

Dr. Robert Lee found the ovaries and Fallopian tubes inflamed in 32 out of 45 cases of puerperal fever. At other times, in all those who die of this disease, evident signs of inflammation of the ovaries are met with. Such, Dr. Lee tells us, was the case at Vienna in 1819.

In the epidemic described by Dr. Gordon, of Aberdeen, the ovary was generally diseased, being red, and swollen to the size of a hen's egg, containing pus, or destroyed by a purrulent process, and pus found in the abdomen. The softening and disorganisation of the ovaries were amongst the most frequent appearances in the Manchester epidemic, mentioned by Mr. Roberton. In one case, twenty-five hours after death, appearances of putrefaction existed in various parts of the body, and the ovaria resembled masses of venous blood.

We consider acute idiopathic ovaritis to be a rare affection, and while admitting, with Drs. F. Churchill, Gendrin, Valleix, and Fauvel, that it is much more frequently a cause of pelvic abscess than is generally admitted, still it is comparatively rare. We repeat the statement, because the contrary may be gathered from Dr. H. Bennet's valuable work, and we cannot admit with him that the pus resulting from this cause, when it passes by the vagina, is frequently mistaken for "the whites," for it is preceded and accompanied by symptoms too acute, in the majority of cases, not to attract great attention. Dr. R. Lee tells us that in the course of his practice he has only met with four cases of idiopathic ovarian abscess.

We believe, with Neumann and Astruc, that sub-acute ovaritis is a common disease; and without admitting that it could always be found on the dead body, the morbid congestion leaving the ovary when life becomes extinct, still we refer to the frequency of lesions found in the ovaries. The records of St. George's Hospital afford further proof. Thus, Mr. Pollock has shown that out of 583 women opened at that institution, from 1841 to 1850, 265 presented lesions in some part of the generative apparatus, and in 116 were found the following lesions:

Adhesions of ovaries	13
Congestion	17
Scrofulous deposits	4
Fibrous	1
Cartilaginous	1
Calcareous	2
Cystic tumours	51
Cancerous	18
Atrophy—not senile	8
Displacement	1
	116

The thirteen adhesions were evident cases of ovarian peritonitis, and

pathologists will admit that inflammation had some influence in producing many of the other lesions.

Dr. Murphy informs us that 30 per cent. of those who consult him for uterine affections, are affected with sub-acute ovaritis; and we have found that our cases of sub-acute ovaritis stand in a precisely similar proportion to the uterine cases which we meet with in practice.

Having thus indicated, from the testimony of some of our best authorities on the subject, how very frequent are certain forms of ovarian inflammation, which differ from those hitherto described, we shall in a few words suggest why they have been passed over unnoticed.

Losing sight altogether of physiological considerations, the diminutive size of the ovaria has caused them to be seldom considered as the starting-points of disease, while their being so deeply imbedded in the pelvic cavity is a sufficient reason for their affections not being detected by the ordinary modes of exploration. We also must not forget, that in the unimpregnated state the ovaria are the centre of the sexual system, and that the other organs of that system, the uterus and the mammæ, are subservient to them. The similarity of the symptoms of sub-acute ovaritis, and of certain forms of metritis, is also a reason that ovaritis has often been completely overlooked, the symptoms being attributed to diseases of the womb, particularly since improved modes of investigation have drawn all our attention to diseases of the womb which admit of an easier diagnosis.

A still more important cause of our ignorance of the milder forms of ovarian inflammation may be ascribed to the obscure physiological functions of the ovaria. The ovary is the organ which, by its physiological impulse, excites the menstrual flow. Healthy menstruation is dependent on the healthy structure of the ovaria; for the phenomena of painful menstruation, when carefully analysed, will be often found to have, in common with sub-acute ovarian inflammation, lumbo-dorsal neuralgia. Now as menstruation is a natural process, it is supposed by women to be a part of those inevitable evils to which human flesh is heir, and however much attended by suffering, they imagine it useless for them to seek relief. Thus we are, generally speaking, not called in, or are merely consulted incidentally, when the catamenia are accompanied by an amount of pain and other symptoms really sufficient to assume the importance of disease. Can it, then, be a source of wonder that we are little acquainted with all the forms of ovarian disease, when we are denied the possibility of studying them in their origin, in those deep-laid foundations of hysterical attacks, of a sterility which at first might have been prevented, or of those enormous tumours, for the existence of which we have afterwards so much difficulty in discovering a cause? Tumours which usurp the place of all the viscera of the pelvis and abdomen; nay, even of the chest, and, generally speaking, leave women no other alternative than that of leading a life of misery, or of undergoing operations too often followed by speedy dissolution.

If we dwell on this subject, it is to impress on the mind the necessity of paying more attention to the phenomena of what is called painful and difficult menstruation, menstrual colic, and that Protean female infirmity, named hysteria, as well as to point out the necessity of taking into consideration not only the vicious preponderance of those nervous forces which give life and impulse to our organs, and determine the quantity and quality of the blood—their liquid pabulum ; but also, as far as possible, the exact local state of those small, yet most important organs, whose altered conditions of structure, of blood, and of nervous influence, produce morbid menstruation as an actual evil, and menace the patient with a life embittered by the various forms of incurable ovarian disease. "Principiis obsta, sero medicina paratur." As the practical result of these views, we shall no longer rest satisfied with treating painful menstruation by brandy-and-water, hysteria by sal volatile, and suppressed menstruation by internal and external stimulants; but having detected the local seat of mischief, we shall at once attack it energetically, with a curative and not merely a palliative intention.

Some perhaps may say, "Though we have not called the disease ovaritis, still we have cured it while treating metritis, painful menstruation, &c., by which it was accompanied." We consider this reasoning erroneous. It would not be difficult to prove, that from an insufficient local examination, though the complicating disease may be cured, the ovarian inflammation will often be only alleviated; the patient may be said to be cured, yet the ovaria remain in a state of sub-acute inflammation, subject to a relapse on every monthly return of ovarian periodicity, or on the accession of any one of the numerous physiological causes of ovarian irritation. A fit soil, we repeat, for disease to spring from, or to take root in, and develop itself, until at last it is recognised, but found to be incurable!

Names acquire and often usurp so much importance, and have had such influence on medical practice, that we must state our reasons for adopting the term ovaritis instead of that generally used in this country—inflammation of the uterine appendages.

We are fully aware that inflammation of the ovaria is often attended by that of the cellular tissue in which they are imbedded, by that of the Fallopian tubes by which their purposes are subserved, and of the serous membrane by which they are covered; but we still object to the term alluded to, because in using it we lose sight of an organ, the importance of which is paramount, and the inflammation of which is the most frequent, and generally entails that of the oviducts and cellular tissue. We object also to the term *appendages*, or *productions*, of the womb, because, in the hierarchy of our organs, the ovary ranks above the uterus, which is, in fact, as much the appendage of the ovaries as the urinary bladder is that of the kidneys; these hollow organs are equally subsidiary in their different purposes to the function of the respective glandular structures with which they are connected. When there is no ovary, the uterus, should it exist, does not menstruate.

Is it the ovary which calls the uterus into action? it gives a periodical stimulus to action on the morbid stimulus, which may be periodical or continuous.

We will, then, use the word ovaritis, because in so doing we designate a thing by its proper name—a name which has the great advantage of bringing palpably to the practitioner's remembrance an organ with all its manifold peculiarities of structure, locality, connexion, and physiological importance—a name which reminds him of the progress of such structural lesions, which might easily be cured by appropriate antiphlogistic measures.

Martin Solon—*Dic. de Med.*—has said that "Ovaritis is a disease which has not yet been carefully described by authors, but that they have gathered together a considerable number of facts, by means of which it would not be difficult to describe the disease." And we have referred to the best of these sources in our hints on the "Bibliography of Inflammatory Ovarian Diseases."

Doubtless, however, the principal reason why the knowledge of diseases of woman is perhaps so little advanced, is the fact that one sex only is qualified by education and powers of mind to investigate what the other sex has alone to suffer. That freedom of investigation on one side, and on the other the freedom of explanation, which has led to the accurate knowledge of diseases of the lungs and of the heart, fails when the functions of the generative organs of women become deranged. Feelings of delicacy, deserving of respect even when carried beyond the bounds of discretion, raise a barrier between the female patient and the practitioner. Instead of making the case clear to him, she often ingeniously evades his questions; in her state of emotion, without meaning to deceive, she often says what is not true, so that unless the practitioner has great experience and rare sagacity, he is frequently led wrong, and his difficulty is increased in proportion to the degree of refinement of his patient. The art of interrogating female patients, so as to derive the greatest amount of information without in any way hurting their feelings or losing their confidence, is no easy matter.

In the first place, as a General always puts the sun in the face of the enemy, so should the practitioner always let the light fall upon the face of his patient, where, as on a map, is often traced the outline and the character of disease, one look often better enabling him to unravel its manifold complications than many a prolonged inquiry. The patient should be allowed to begin the account of her illness in her own way, or if too much unnerved to do so, then the practitioner should take the lead and ask what she has been suffering from; and having succeeded in giving her confidence, he should listen with eyes bent down, or seemingly bent down by reflection, to all the patient may say, even urging her on at intervals, until the close of her story, for it is well worth the trouble of listening, if even only one grain of corn can be extracted from much chaff. With respect to the quelling of the eye, we do not suppose for an instant that any gentleman will rudely stare his patient out of countenance, but we mean that at first he should look at her as little as possible,

for she must be already sufficiently uncomfortable at being obliged to apply to a stranger for advice, and would be still more so, if under the full glance of one whom she supposes to be gifted with the knowledge of her organisation. Besides, the falling of the upper eyelid will materially assist the adviser to conceal his impatience at some long rambling unconnected tale, which is not unfrequently inflicted upon him,—an impatience which, if once detected by the patient, would take away from the efficacy ot his prescriptions, and would destroy the faith which might have led to health.

Having listened to the patient's tale, the practitioner must now have his turn, and before beginning, he should warn the lady that as he has not interrupted her, neither must she interrupt him. According to some method of his own he should then take a general survey of the principal functions, the nervous system, sleep, the heart, and organs of circulation, the appetite, the digestion, which permits the inquiry of whether the bowels are regular, and as a sequence, "Is everything else regular?" If the reply be "Yes," then should be inquired, "If regular every month?" "If to the usual amount?" "If there be much pain?" By this mode of inquiry we can generally obtain the necessary information, even from the young and the unmarried; for as they are not ashamed of having lungs or a heart, they feel at home with the doctor by the time he inquires as to the state of the bowels and their regularity, which naturally leads to those questions respecting the menstrual function; whereas if these last had been abruptly put in a preceding part of the interrogation, the patient would probably have been flurried, and the doctor annoyed at the unsatisfactory answers he had obtained. If, instead of depriving themselves, by the laxity of their interrogations, of those indications which would help them to unravel the entangled skein of morbid action, medical men were more particular in their inquiries respecting the menstrual function, we feel convinced they would oftener establish their fame by the recovery of the patient's health. In answer to the usual question, "Is everything else regular?" how often have we received an affirmative answer from a girl or her mother, when on further inquiry we found that the menstrual flow was either too painful, or too profuse, or too scanty. Sometimes, indeed, a patient has assured us that it "was quite regular," "so regular that it returned every fortnight or ten days;" while another, on the contrary, will affirm that "it was never regular because it returned every three weeks." Useless as these hints may be to those who have been long in practice, they would have materially assisted ourselves had we found them earlier in life. The belief in their utility, therefore, makes us offer them without apology to the junior members of the profession.

If the investigation of diseases of menstruation be attended by so many difficulties, the detection of ovarian disease is fraught with still greater, for one of the principal reasons which prevents certain forms of ovarian disease being well known, is the repugnance that patients naturally entertain for modes of exploration by which alone these diseases can be made certain—namely, the digital examination of the

patient per vaginam and per rectum. If in ordinary cases such explorations were proposed by the practitioner, they would seldom be permitted, and it is only when the patient's sufferings have become habitually intense, or when the natural desire of carrying out the ends of marriage has conquered this reluctance, that we are allowed a scrupulous examination of those glands which in woman minister to the fulfilment of such objects.

However painful such examinations may be both to the patient and her adviser, they are nevertheless frequently indispensable to ascertain the real nature of a doubtful case, and to cut short, by proper treatment, complaints which would certainly embitter if they did not curtail life. It is not, then, necessary to prove that it behoves the guardians of the general health to impress on the mind of the weaker sex, that, if the organs become diseased on which depend their hopes of happiness as wives and mothers, those organs must be treated like any others; and that, as they submit with patience to the disease itself, so is it incumbent on them to submit to an examination, distressing no doubt, but necessary for the recovery of their health.

But, while laying a painful duty before his patient, the medical attendant, to whom so much is confided, will at least show, by his manner, that he feels for her position. Should he merely exhibit a polite and cold brutality, the patient, though she may respect his talent, will deem him incapable or unworthy of comprehending the moral sufferings attendant on what was conceded to stern duty,—sufferings which he was unwilling or unable to relieve by considerate sympathy.

We have asserted that the imperfection of our data concerning ovarian inflammation is partly to be ascribed to the difficulty of exploring these organs; and we propose, therefore, in this place, after reminding the reader of the anatomical connexions of the ovaries, to detail the various plans which have been adopted to ascertain their diseased states. The peritonæum in the female, after covering the posterior surface of the bladder, is reflected to the uterus; spreads over the interior surface of the body of that viscus; covers its posterior surface; and is then again reflected to the rectum. As it passes from the anterior to the posterior aspect of the uterus, the membrane forms two wide folds, which contain the Fallopian tubes, the ovaries, and the round ligaments. The two folds of the peritonæum, which thus, by their juxtaposition, constitute the lateral ligaments, are separated from each other, as also from the organs which they contain, by a certain amount of filamentous cellular tissue. This cellular tissue is connected with the sub-peritonæal cellular tissue of the pelvis, although in a great measure distinct from it; and it deserves more attention than it has hitherto received from either anatomists or pathologists. From its nature, it is prone to inflammation; and, consequently, it plays a most important part in inflammatory disease of this region. Its mechanical use is, no doubt, to allow the folds of the peritonæum to separate and glide one over the other, when the uterus increases in its dimensions during pregnancy. It is of extreme importance to be familiar with the exact situation of the ovaries, and their

relation to the neighbouring parts. When the uterus is in its healthy and unimpregnated condition within the pelvis, the ovaries, with the intestines superimposed, are situated at the sides of the womb, behind the bladder, and anteriorly to the rectum; but, in consequence of their great mobility, and the laxity of their attachment to the uterus, they are so placed that, if at all increased in volume, they acquire a tendency to descend into the recto-vaginal space, and are then generally accessible to the finger introduced into the rectum. When, on the contrary, the uterus is enlarged, from impregnation, hypertrophy, or any other cause, it rises from the pelvis into the cavity of the abdomen, and the ovaries, following its ascent, are removed beyond the reach of a digital examination per vaginam. When the volume of the ovary is not such that it can be felt through the abdominal parietes, it may be appreciated by an examination per rectum. In certain individuals, however, the mucous membrane of the vagina is so relaxed in its connexion with the cervix uteri, that the finger may, by depressing the *cul-de-sac* which exists at this spot, reach the ovary.

Concerning the relation of the ovaries to the neighbouring parts, Dr. Chereau aptly remarks that abnormal displacements of the uterus, such as retroversion, anteversion, &c., entail marked changes in the position of these glands, as do also tumours of the peritonæum, and morbid collections within its folds. And still more important is it to observe that, on the other hand, morbid affections of the ovaries, especially such as modify their volume and weight, act directly on the uterus, incline it to the right or left of the median line, and may so force it downwards as to produce a descent of the uterus, or to render it immovable. It is of great importance to remember this fact, and to know how to discriminate between a simple displacement of the uterus, and one which is produced solely by an affection of the ovary, for the prospect of relief is much greater in the former case than in the latter; and many distressing mistakes have occurred from the want of a proper diagnosis.

ABDOMINAL EXAMINATION.

At first sight nothing seems so easy as to derive information from this ordinary mode of exploration, but such is not the case; it is even difficult to convey by words those niceties of manipulation which can only be attained by repeated practice. Some useful suggestions have, however, been made. The intestines and bladder having been previously emptied, the patient should lie on her back, with the head and shoulders elevated, and the thighs so placed as to form nearly a right angle with the body; the medical attendant should then ask the patient such questions as may divert her attention, and hinder the contraction of the recti-abdominis muscles, the divisions of which have, by the inexperienced, been sometimes taken for tumours. Before making an examination the practitioner should wash his hands with soap and warm water—

1. To cleanse them;
2. To soften them;

3. To increase their tactile sense, and to avoid reflex muscular contraction of the abdominal muscles;

4. To give the patient an idea of the care with which he undertakes her case.

"Pressure," says Ritchie, "directed backwards towards the brim of the pelvis, from a point a little upwards from the curve of Poupart's ligament, will strike the ovaries and detect swelling and pain in them should it exist." Should a tumour be found, its peculiarities should be studied, by varying the position of his hands, the degree of their pressure, and the posture of the patient, in order to ascertain the site, size, and connexion of the growth, whether it be fixed or movable, soft and yielding, hard, pulsating, or otherwise, fluctuating or solid. After parturition, the laxity of the abdominal walls is such as to allow of a more accurate manual examination, for the hand can then plunge into the deepest abdominal recesses. We may add, that a careful examination of this description should never be omitted after confinements, in order to detect any incipient abdominal tumour. Thus, in three of the cases recorded by Madame Boivin, in her *Mémoire sur une des Causes de l'Avortement*, the accoucheur, by neglecting this, failed to recognise the development of ovarian disease, which afterwards proved fatal by bringing on abortion. It is also sometimes possible to discover where adhesions have taken place between a tumour and the abdominal parietes, by a feeling of crepitation and a sound as of new leather, which sign, first detected by the sagacity of Dr. Bright, we have observed in several cases. Is it necessary to state, that unless the swelling of the ovaries be considerable, or the abdominal walls thin, it may not be discovered by this mode of exploration, and that it will be indispensable to combine it with an

EXPLORATION PER VAGINAM.

To derive the greatest amount of information from a vaginal exploration, the medical attendant should be placed on that side of the patient where ovarian tumefaction is rendered probable by pain or other signs, and he should use the index finger of the hand corresponding to that side, while he places the other hand on the hypogastric region, so as to press the ovary forcibly down towards the exploring finger. Our instructor and esteemed friend, the late Professor Recamier, was in the habit of passing his hand under the patient's thigh instead of above it, so as to obtain greater facilities of investigation. We are thus easily able to detect moderate-sized pelvic tumours, particularly if, as is often the case, they have gravitated towards the recto-vaginal space.

If the tumefaction be less considerable—if there be only that degree of ovarian congestion which partly produces the phenomena of painful menstruation, &c., the ovary may still be situated above the vagina, and then, in order to feel it digitally, the vaginal *cul-de-sac*, which surrounds the os uteri, must be raised. To effect this purpose, it is necessary to press the perinæum with the three bent fingers, and, when possible, to introduce both the middle and index

fingers into the vagina, which gives an additional third of an inch to the exploring instrument. We are thus enabled to estimate the amount of pain caused by pressure on the swollen ovaria, as well as the degree of heat of the vagina, and whether its superior curve is elastic, or hard and resistant, as if infiltrated. Professor Simpson and Dr. Gendrin state, that in numerous cases they have felt enlarged ovaries *in situ*, by bringing the organ between two fingers introduced into the vagina, while the other hand was pressed down into the brim of the pelvis on the same side. The uterus, in Dr. Simpson's opinion, requires to be anteverted, and somewhat turned to the opposite side with the uterine sound, in order to stretch the broad ligament of the side under examination. He first ascertained the possibility of making this examination of the ovary in a case of natural ante-version of the uterus. When the tumour has so increased that it is no longer entirely situated in the vicinity of the vagina, but has ascended towards the brim of the pelvis, the finger, though it cannot reach its whole extent, will still afford valuable information respecting its position and state. Thus, the tumour may depress the uterus to the right or to the left, may flatten it against the pelvis, causing its complete retroversion, and thus render it impossible for the finger to attain the os uteri. M. Robert, of Paris, has met with several cases of this description. We are also able to examine the condition of the inferior segment of the uterus, and to ascertain how far its usual mobility has been encroached upon, and to what extent this organ has been bound down by the thickening and infiltration of the adjacent inflamed tissues.

By a vaginal exploration, we are able to discover whether the tumour is intimately connected with the body of the uterus, or only placed in close juxtaposition to it; thus, in puerperal congestion of the broad ligaments, the tumour is often so moulded as to cap the uterus. In such cases, it is interesting to ascertain whether these bodies adhere intimately, for if the movements communicated to the tumour through the abdominal parietes are felt by the finger placed in the vagina, we may suppose that the tumour and the uterus are intimately connected: we also obtain a correct notion of the diameter of the tumour, one of the extremities of which is at the hypogastrium, and the other in connexion with the vagina. The fluctuation of an abscess of the ovaries, or of their surrounding cellular tissue, may sometimes be distinctly felt by a manual examination, particularly after parturition; but even then it is necessary to support the tumour by placing the finger in the vagina, otherwise the semi-mobility of the whole tumour might easily be mistaken for the mobility of its contents. When thus exploring, it is sometimes possible to detect a correspondence of fluctuation between the hand on the hypogastric region and the finger in the vagina. This is generally the case with sanguineous pelvic tumours. When the tumour is situated sufficiently low down, fluctuation may be detected by examining the patient per vaginam; two fingers—the index and the middle finger—being introduced into the vagina, and placed so as to embrace a segment of the tumour. One finger must then be firmly applied to the

tumour to receive the shock transmitted by the fluid, while percussion is made with the other finger on the opposite side of the tumour. In the mean time, an assistant, by firmly pressing in the hypogastric region, forces the fluid to accumulate as low as possible in the pelvis. The facility of thus discovering fluctuation will be in direct proportion to the thinness of the parietes of the tumour, and its prominence in the vagina. If this mode of investigation fails to render evident the existence of pus, the presence of which is otherwise indicated by rational symptoms, an exploratory puncture will decide the question without subjecting the patient either to much pain or to imminent danger.

EXPLORATION PER RECTUM.

We agree with Stoltz and Hirtz—both distinguished professors of the faculty of Strasburg—with P. Frank, Neumann, Schönbein, Romberg, Löwenhardt, and Carus in Germany, with Velpeau and Chereau in France, and at home with Drs. Ashwell, Laycock, Rigby, Ritchie, Seymour, and Mr. S. Lee, that it is frequently possible to reach the ovaries, in their natural situation, by this mode of exploration, and thus to appreciate their volume and their degree of sensibility.

Mr. Canton has lately mentioned having been able to do so on the dead body. Dr. Simpson expresses a contrary belief, stating—"We believe that in this way we may ascertain the existence of morbid tendency in the vagina rectal reflection of the peritonæum, which may be done, also, by a vaginal examination; and further, that we may touch the ovary when it is much enlarged or distended with purulent matter; but we entirely doubt the possibility, as a general rule, of the finger easily reaching the natural situation of the ovary, and ascertaining its degree of tenderness and swelling. We have, in several examples, endeavoured to ascertain the truth and applicability of this diagnostic mark upon the dead subject, and find it altogether impossible to touch the ovary *in situ*, even with a very long finger, except where the pelvis is unusually shallow."

A reviewer of our first edition so far agrees with Dr. Simpson as to affirm that the unenlarged ovary can only be reached, provided the patient have a shallow pelvis with thin yielding structures, and will lie quiet and passive under examination, but that without these advantages the ovaries cannot often be reached.

Whatever difference of opinion may exist upon this point, all agree that, on account of the thinness and elasticity of this membranous canal, even slight swellings of the ovaries or the neighbouring tissues may be thus easily detected; and that when the tumour is considerable, it may be the more readily distinguished from the uterus. The most effectual way of performing this examination, and that which permits the finger to reach a greater height, is to place the patient in the English obstetric position, and to use the hand of the same side as that on which the patient is lying, by which the pulp of the finger is most readily brought into contact with the back of the uterus. It is sometimes useful to make the patient lie on the right side to examine the right ovary, and on the left side for the left ovary;

and it is worth remembering, that the way to overcome the resistance of the splincter ani to this practice, is to cause its muscle to be put in action. Meissner and other German obstetricians think they facilitate the examination by telling the patient to approach as much as possible the knees to the breasts.

When introduced into the rectum, the finger can generally attain and circumscribe half of the posterior surface of the uterus; and if not accustomed to this mode of examination, the medical attendant will esteem the healthy uterus to be morbidly swollen. The finger will also be able to detect any swelling of the broad ligaments, and likewise to feel the ovaries, when they are somewhat swollen, like a knuckle on either side of the uterus, seeming to spring from one or the other of the sacro-iliac articulations. When its structure is healthy, no pain is experienced on pressure of the ovary; but when it is inflamed, the patient often expresses, by her features, that we touch the seat of the disorder. While examining per rectum with the one hand, the other should be placed on the region of the ovary on the same side, the finger being in the rectum, and the physician pressing gently, but suddenly, with the other hand, on the ovarian region. The patient will then experience, in the posterior part of the pelvis, a pain similar to that felt when the ovary was directly pressed by the finger. Pressure on the ovary also produces as much pain in the inguinal region as if that were the actual seat of the impact. If the ovary be much swollen, and the abdominal parietes thin, it is possible, by pressing the ovarian region, to force the ovary against the finger; and this will frequently cause the patient to exclaim that we hold the complaint between our fingers.

The existence of a painful tumour in the recto-vaginal *cul-de-sac* is in itself a strong presumption of its being the inflamed ovary; but the diagnosis will be assisted by the sound being passed into the bladder, and the uterine sound is of still greater value, for it enables us to raise the uterine fundus, and thus, by displacing the womb, to prove that the painful tumour is the ovary and not the uterus. This mode of examination is far from being required in most of the cases which come under our observation, but would be indispensable to give certainty to the diagnosis.

Is it necessary to state, that if a fluctuating tumour be situated in the immediate vicinity of the rectum, nothing will be easier than to detect fluctuation by a rectal exploration?

Lisfranc and Columbat consider the rectal examination is often preferable for young women in whom the hymeneal membrane does not permit an examination per vaginam.

DOUBLE-TOUCH.

We have given the name of "double-touch" to a mode of exploration, wherein the two previous modes are combined, so that the index finger being placed in the rectum, and thumb in the vagina, it is possible to embrace between the thumb and finger any intervening morbid growth.

P. Frank recommends this mode of examination. Dr. Blundell

used to employ it, and taught its value at Guy's Hospital, in difficult cases; but Professor Recamier* has principally insisted on, and practically exemplified, its utility, as we shall hereafter have occasion to show, in many interesting cases. It is particularly useful in enlightening us respecting moderate-sized tumours, which are not large enough to rise above the brim of the pelvis, and still small enough to escape identification by the finger, in the rectum or the vagina

* The frequent mention we have made of Professor Recamier, calls upon us to introduce to the profession a reputation eclipsed by many French names of far inferior value, but coming to us well bolstered up by piles of massive volumes. Besides, within the last few months, death has removed him from a wide field of action, and we can now speak of him with greater freedom. Contemporary with Bichât, Recamier, in 1796, first established clinical lectures at the Hôtel Dieu. He originated, at the same hospital, the plan, now become general in all the hospitals of Europe, of making *post-mortem* examinations, thus giving an impulse to pathological anatomy, which forms the principal title to fame of the medical school of Paris.

All the modern improvements in the treatment of the diseases of women originated with Recamier. He it was who invented the speculum. We say *invented*, as, in a practical point of view, how can we compare his instrument with the *Dioptra* of Paulus Ægineta, of which, in several passages of his works, Fabricius de Aquapendente speaks after the following fashion:—"If you find the orifice of the womb closed by a membrane which impedes conception, know that this is incurable, *for the knife cannot attain so high*."—Fabricius de Aquapendente, 1670, p. 749. To him also we are indebted for the treatment of ulceration of the neck of the womb by topical applications. But even without these claims to notice, Recamier would still be eminent.

Though of an ardent temperament, he preserved intact the sound medical traditions he had received, and has transmitted them unalloyed to his disciples, without imbibing the doctrines of Broussais, whose medical reign over France was once all but universal, infecting even to a certain degree the tenets of those who opposed him, and whose erroneous doctrines still form the basis of French practice. As a surgeon, too, Recamier has great claims on us, both for the accuracy of his diagnosis, and the boldness of his operations. No region was inaccessible to his inexorable finger, and no obstacle could baffle his endeavours, when he dived into the depths of the most hidden cavities of the human frame, to detect some deep-rooted tumour, or fix upon the precise spot wherein to plunge the liberating steel. Of late the encroachments of age had deprived his hand of its wonted firmness and dexterity, and he had confined himself principally to consultation practice.

When an eagle eye was required to unravel the web of intricacies woven by the anomalies of Nature and the action of conflicting treatment, then was Recamier necessarily called in. When the quick determination of an energetic man was wanted in the moment of extreme danger, then was Recamier sent for. As difficulties increased, so did his persevering efforts, and he found, in the fertility of his genius, fresh suggestions wherewith to oppose the encroachments of disease.

As a lecturer he did not monotonously drawl out soporific compositions to the sleepy few, but kept alive the attention of his numerous pupils, by allowing the treasures of his experience to flow freely from his lips, clothed in that characteristic garb which always stamps individuality. To fertility of invention, soundness of practical science, and firmness of action, he added a philosophic grasp of mind; and those who have not, like ourselves, heard his luminous disquisitions on some difficult case, in the *laisser aller* of a medical *tête-à-tête*, may have some idea of the power of his reasoning faculties, and the acuteness of his dialectics, by referring to the second volume of his work on Cancer.

As a man Recamier stood unsullied and respected by all parties, for the perfect independence of his character, his high morality, the conscientiousness

alone. It enables us to seize the antero-posterior diameter of the tumour, and to recognise its position; and it prevents our mistaking the uterus for a morbid growth. If, as is often the case, the recto-vaginal space is the seat of the tumour, by thus practising the double-touch, and pushing up the perinæum, by pressing on it with the first inter-digital space, we can embrace the accessible part of the tumour, and easily detect its fluctuation, if fluid be present.

An experienced reviewer in the *British and Foreign Quarterly* states that, for the thumb, he had often, with advantage, substituted the forefinger of the other hand, so that the swelling may be felt between the two forefingers; and we find that this allows a deeper stretch into the vagina, and is, therefore, available in cases where the usual mode would be useless. The practical value of the double-touch is particularly shown in the following cases:—

The first case is extracted from the interesting memoirs of Dr. Bourdon—*Mémoires sur les Tumeurs fluctuantes du Bassin*, Revue Médicale, Paris—and illustrates the advantage of the double-touch, by which means alone Professor Recamier was able to detect fluctuation in a tumour situated in the recto-vaginal space:

Case 1.—A woman, aged twenty-four, previously in good general health, but often affected with leucorrhœa and abdominal pains, eight months since gave birth to her second child. About a month ago she was seized suddenly, and without any apparent cause, with shivering, fever, vomiting, pain and tension in the abdomen. These symptoms were followed by irregular shiverings during the day, and by nightly perspirations. When she entered the Hôtel Dieu, May 1st, 1840, she was labouring under great depression, pain, and

of his religious convictions, and a charity which prompted him to give away every year one-tenth of his large income. To say that he was liked by all the eminent physicians he met in consultation would be contrary to truth. His exasperating want of punctuality would sufficiently account for this; and had this sketch been penned during one of the many hours we have awaited his arrival at a case, we should probably have described him in a less favourable light. His unwillingness to bend his opinions to those of other physicians he might meet was another reason of his not being acceptable to all parties. Whether this be really a defect or not may be questioned, for considering his opinion on any case as the expression of a religious duty, Recamier did not give it lightly; but when once given, nothing could induce him to modify it to suit the convenience or gain the approbation of other parties. If, however, with his equals, Recamier was at times uncompromising, amongst his pupils, and the younger practitioners he met at the bedside, nothing could exceed the perfect liberty of opinion which he courted, the flattering way in which he spoke of, and the effectual support he gave to, his junior counsel.

As for his unpunctuality, it arose from his conscientious desire to throw into every case the heartfelt energy he possessed. Whether the patient were rich or poor, it mattered not to him; all had an equal share of his attention, and he would never leave his patients until satisfied that he had to the utmost of his power exerted himself in their behalf. Neither the mere *counter* of medical facts, nor those who give us the well-digested thoughts of others, are the great men; but the master-minds who can vivify the multitudinous facts of this age by the philosophic spirit of olden times. Such was Recamier; and he may be considered an ornament to his country, and as one of those illustrious characters which at long intervals adorn the history of medicine, and justly raise our profession in the estimation of the world.

headache. The tongue was white; there was sickness, thirst, and constipation; pulse 100.

After a careful examination of the abdomen, a hard tumour, having the shape and size of the head of a fœtus, was found on the right side, extending towards the iliac fossa. It was painful on pressure, and the abdominal parietes could be made to glide over it. From vaginal and rectal examination, it appeared certain that this tumour descended into the pelvic cavity as low down as to the recto-vaginal space, moulding itself to the posterior surface and right side of the uterus, which it depressed to the left; the os uteri, obeying the same impulse, was placed in contact with the pubis. Neither by the vaginal nor the rectal exploration, separately performed, could any fluctuation be recognised; but when exploration was simultaneously performed through both canals, the fluctuation became evident. Passing urine was attended, in this case, with no particular symptom, but the patient felt as if she were going to extrude a foreign body per vulvam. The abdominal pain radiated to the loins and thighs, particularly to the right side, which was sometimes benumbed. Ordered, ipecacuanha, twelve grains; poultices; injections per rectum and per vaginam.

Professor Recamier made an incision through the posterior wall of the vagina, where the fluctuation was most evident, and this was immediately followed by the flow of a considerable quantity of red, viscous, inodorous fluid. The incision was enlarged, and on introducing the finger the parietes of the tumour were found to be thick, resisting, and fibro-cartilaginous in structure. The patient felt much relieved. Baths and injections were administered on the following days.

After a few days the patient was better; the pain and other symptoms diminished; but the ingress of air into the cavity gave rise to a fœtid secretion. Methodical pressure was applied to the abdomen; the last portion of the injection was ordered to be introduced very slowly, so that it might be retained, and the patient was placed so that the pelvis might be higher than the loins. These precautions were sufficient to deprive the secretion of its fœtid smell. It became daily more like pus; the tumour diminished in size, and was no longer painful. Strength, appetite, and sleep returned.

There was every reasonable hope of a speedy cure, when, on August 13th, ten days after the operation, there was a return of fever, and violent pain in the left side.

15th.—By a vaginal exploration, a hard, painful tumour, about the size of a hen's egg, was found to the left of the uterus. This pressed the uterus to the right; while the opened cyst, by the diminution of its size, no longer displaced it to the left.

For several days it was feared that this second swelling would terminate in suppuration; but by the employment of baths, poultices, and injections, it disappeared; and on the 21st, instead of a large tumour, only a small swelling was found. Injections in the cyst were continued, so that the wound might not close too soon; but

when the secretion had become less in quantity, and more like lymph than pus, these were discontinued, and the wound healed.

On September 12th, thirty-nine days after the operation, the patient left the hospital, quite recovered, and without any fistulous opening.

Remarks.—This case shows the decided advantage to be obtained from simultaneous exploration per vaginam and per rectum. It was only by this method of examination that fluctuation could be detected, and the patient's life saved; for the same explorations, when separately performed, did not afford the necessary information. This sanguineous pelvic cyst had no doubt existed for several months; and its presence was only detected when it became the seat of inflammation. It was supposed to be an abscess of the broad ligaments; but this error of diagnosis did not influence the treatment, as it was urgent to evacuate the fluid, whether puriform or of whatever nature, so soon as fluctuation had become manifest.

The following case also occurred at the Hôtel Dieu, in the practice of Professor Recamier, and again shows the utility of the double-touch in correcting an erroneous diagnosis founded on vaginal and rectal explorations separately exercised:

Case 2.—A female, aged thirty-two, having had three miscarriages, and six children, the youngest eight months old, had, ever since her last confinement, suffered pain in the left side of the abdomen, with constipation, and a frequent desire to pass urine, even when in the horizontal position. There was no difficulty in moving the left leg, no sickness, nor did the abdomen present any extraordinary tumefaction. Her face was pale, and bore the expression of suffering. There was pain in the left hypogastrium, which was increased by manual examination, a hard tumour being detected in the fundus of the pelvic cavity.

By an examination per vaginam, nothing preternatural was found in the neck of the uterus, but it inclined to the right side, while to the left was found a hard, globular tumour, about the size of an egg. The examination per rectum furnished much the same evidence. The patient suffered from slight fever at night, followed by perspirations.

Diagnosis.—Phlegmonous congestion and incipient suppuration in the broad ligament. Leeches and tepid baths, poultices, and enemata were prescribed.

A few days afterwards, the patient being better, another examination was made, but in this instance per vaginam and per rectum simultaneously, which had not been done previously. It then became evident that the womb was not to be felt in its right place; that it had been diverted to the left side, thus simulating a tumour of the broad ligament. The patient recovered from the circumscribed chronic peritonitis, but the inclination of the womb remained, on account of the firm adhesions which had taken place, and bound it down. For a long time walking was painful to the patient.

We took the minutes of the following case in Dr. Rayer's ward at

La Charité, in Paris, and adduce it to show, that if the double-touch had been performed, the tumour, without doubt, would have been detected, and the patient's life, in all probability, would have been saved.

Case 3.—A woman, aged forty-five, had been long suffering from some undefined abdominal complaint before entering La Charité, on February 15th, 1848. The abdomen was uniformly enlarged, and tender when pressed; there was also retention of urine; and on introducing the catheter the instrument took a perpendicular direction against the pubes, and only a few ounces of urine were voided, though, on percussion, the bladder still sounded as if full. The male catheter was then substituted for the female, and Dr. Blanche, with some trouble, and by exercising a moderate degree of force, penetrated into a second portion of the bladder, and evacuated from two to three pints of urine. This operation was daily performed, with the same difficulties. All this was esteemed by Dr. Caseau to be the result of an ovarian tumour; in Professor Velpeau's opinion, it was caused by an uterine tumour; but Dr. Rayer prudently forbore giving any diagnosis. The patient lingered for several days with increased abdominal pain, fever, weakness, and then died.

Post-mortem Examination.—We found general peritonitis, with considerable effusion. The bladder was enlarged, and presented traces of chronic inflammation, and a few gangrenous spots; the uterus and ovaries were without adhesion. To explain the peculiarity of the patient's symptoms, we found between the bladder and the rectum a globular tumour, about the size of a cocoa-nut. Its parietes were very thin, firm, and fibrous. It contained a yellow fluid of the colour and fluidity of ordinary urine. It was this tumour which pressed on the bladder against the pubes, and so divided it into two cavities, that on sounding the woman it was not difficult to penetrate into the smaller cavity, but it required great force and a longer instrument to enter the second portion. This woman had been carefully examined by some of the most eminent men in Paris, yet the explorations per rectum and per vaginam separately did not lead to the detection of the tumour, perhaps on account of its uniform elasticity; but had the double-touch been put in practice, the tumour would have been detected; and if its detection had taken place before the supervention of general peritonitis, the patient's life might have been prolonged. In reference to this case we may remark, that had the patient fallen into inexperienced hands, force might have been employed in the usual direction of the female urethra, the cyst might have been perforated, and its contents evacuated, and looked upon as urine. One of two things would then have occurred—the inflammation of the cyst, as a consequence of the ingress of urine to its cavity, and ultimate death; or adhesive inflammation might have taken place, and the patient have been cured without the nature of her complaint being ascertained. A case of an ovarian cyst was lately cured by Professor Bennett, of Edinburgh, after the emptying of its contents through the bladder.

A case similar to the last was published by Mr. Curling.—*Transactions of the R. M. and C. Society*, vol. xxix.

A speculum examination may be necessary, as it not unfrequently occurs, that intense pain in the region of the ovary may exist with abdominal tension, so as to render probable an inflammatory swelling of the ovary, whereas the symptoms are merely consequent on ulceration of the neck of the womb, and can only be removed by curing the uterine affection. It would be absurd to lose time in explaining the frequent necessity of this mode of examination, for the question is not, whether it has been abused by some, or too much neglected by others, but whether the diagnosis of surgical diseases has become so sure, that it can dispense with any means of throwing additional light upon the case under consideration. Should, however, practitioners require an explanation of the grounds which warrant such an examination, let them refer to Sir C. M. Clarke's work.—Vol. i., p. 43. The principles of science, when once unveiled, may be obscured by false reasoning, but they cannot be obliterated; the arguments by which, in 1814, this respected author advocated the digital examination of the womb, equally apply to its ocular examination in 1853.

ON DISEASES OF WOMEN,

AND

ON OVARIAN INFLAMMATION.

CHAPTER I.

> "Propter ovaria sola
> Mulier est quod est."

THEORIES OF MENSTRUATION.

For ages it had been supposed that the womb was principally concerned in the two parallel phenomena of generation and menstruation, but within the last few years it has been proved that "the ovary is the workshop of generation," and that it contains the inciting cause of menstruation. It is very obvious that no organ can derive its power of action from any other organ, the appearance of which is posterior to its own, whether in the development of the embryo, or in the successive complication of organs in the zoological series; we may therefore infer, that the ovaries which appear first, impart to the uterus its special power of action. It is also manifest, that every organ receives its stimulus from that which follows it in the successive evolution of other parts of the system, as seen in the development of the embryo. Hence, it is the uterus which stimulates the ovaries to increased action. Moreover, in any series of organs constituting an apparatus, the middle organ is always placed between an organ anterior to itself, from which it derives its *ratio standi*, its final end—and a third organ, whose development is posterior to its own, and from which it derives its appropriate stimulus. The uterus, therefore, derives its stimulus from the external organs of generation, and the reason of its existence from the ovaries. The relative importance of the organs of generation being clearly established, we shall briefly observe, with respect to the ovaries, that they are throughout the scale of creation the *ultima ratio* of generation. In woman it has been amply shown, by the successful experiments of modern observers, that the ovaria are the essential organs of reproduction, and that in them originate the greater proportion of those sympathies which have been so long generalised as uterine; furthermore, that the development of the pelvis, of the uterine system, and of the mammæ, the function of menstruation, and all the peculiarities of the human female, depend upon the ovaria. These may consequently be considered the essential organs of the generative system, for they are always present, whatever form the organisation may assume. We may, then, admit that the ovaria not only supply that *pars ventris*—as the Roman jurists used to say—which, with the stimulus of the seminal fluid, can be developed into an indi-

vidual similar to its progenitors, but that they also determine the phenomena of menstruation.

With regard to the influence of the ovaria in the production of menstruation, there is not now a dissentient voice ; the periodical turgescence of the ovaries, admitted by all whose attention has been devoted to the subject, was strikingly exhibited in a woman who laboured under hernia of the ovary projecting through the inguinal canal of the right side.—*Verdier Traité des Hernies*, 1840, p. 396. The volume of the tumour varied much, but was always observed to be large immediately before the catamenia, to diminish on their irruption, and to become very small indeed when the discharge was abundant. A similar case has been under Dr. Oldham's care for the last year, the central sexual organs are wanting; there is no vagina or uterus, but the two ovaries are external to the inguinal canal, and at the menstrual times one increases enormously and then goes down.

Nature proves the relative importance of the ovaries and the womb in women who, from some unknown cause, have been congenitally deprived of one or the other of these organs. The following cases of absence, or of a rudimentary state of the ovaries, show that we are right in recognising with Owen and Macfarlane, with Lauth, Dance, Isodore Geoffrey de St. Hilaire, that the ovary is the only essential part of the generative system.

In the *Repertoire d'Anatomie Pathologique*, Tom. v., p. 99, Lauth gives the following case:

Case 4.—A woman who died at the age of fifty-three, had never menstruated nor had children, and connexion, often performed during several years, gave no pleasure. Her appearance was masculine, the skin brown, the muscular system strongly developed, no mammary gland, and the nipple and its areola were like that of a man. Her pelvis was also masculine; the subpubic angle, instead of measuring from ninety to ninety-five degrees, as it usually does in woman, only measured sixty-three and a half. The external organs of generation were normal; the clitoris well developed ; no hymen ; the vagina short, but wide and smooth ; the uterus *bicornate* and *semi-membranous ;* no ovaries, the places of which were marked by a small quantity of cellular tissue. Lauth attributes the abnormal structure to the absence of the ovaries, and says, that since it is on account of the ovaries that woman is what she is, no wonder if in their absence other important parts of the sexual system should have been at some very early age arrested in their development.

In the same journal—Tom. x., p. 474—Mr. Renaudin relates a case of absence of the womb coinciding with rudimentary ovaries. The woman had never menstruated, the breasts were never developed, and even the external organs of generation were not altogether perfect.

Morgagni relates a similar case.

Thus in absence of the ovaries, the constitution is generally masculine, the womb rudimentary, and there are no menstrual pains, nor any menstrual crisis; although cases have been noted in which there was congenital absence of the uterus when the ovaries were present,

in which the individuals experienced monthly violent pains about the pelvis, and all the other symptoms which accompany ordinary menstruation, though without the sanguineous discharge.

The following are instances of the absence of uterus, with the presence of the ovaries:

CASE 5.—Dance relates—*Archives Gen. de Med.*, Tom. xx., p. 523—that a woman, twenty-seven years of age, died without ever having menstruated, or even having the prodromata of menstruation; to all other appearances, in stature, form, and mammary development, she was a perfect woman. For four years she had lived with a man, and was sexually inclined. The external organs were well formed, but the vagina only consisted of a *cul-de-sac*, half an inch long. The rectum was found adherent to the bladder; the ovaries and tubes were normal, and they met in a swelling about as big as a nut, which neither presented the form nor cavity of the body or neck of the womb.

A case of complete absence of the uterus is given by Dr. Ziehl, of Nuremberg.—*Gaz. Med. de Paris*, No. i., 1851.

CASE 6.—A woman, aged thirty-seven, married at thirty-two. She was perfectly healthy, had never menstruated, but often had leucorrhœa. Two of her sisters had well menstruated. Connexion was never perfectly performed, and gave no pleasure. She died tuberculous. The labia and clitoris were perfectly developed, but scarcely could the index pass into the vagina, which was a *cul-de-sac*, an inch long, and behind it there was no trace of uterus. The Fallopian tubes were in the broad ligaments behind the bladder, the fimbria were normal, their opening free, but they had, of course, no uterine aperture. The ovaries were hard, dry, and externally much corrugated, but this was probably the effect of age.

Duplay has published—*Arch. Gen. de Med.*, Tom. iv., p. 418—under the head of uterus without cavity, and ovarian apoplexy of both ovaries, a case which is one of arrested development of the uterus with the persistance of regular ovaries:

CASE 7.—A woman died of phthisis, at forty-three. She had never menstruated, nor borne children. The body of the uterus was similar to that of a fully-developed fœtus; it was six lines high and ten broad; the neck of the womb was eighteen lines long, and its cavity did not continue into what represented the body of the womb. In the left ovary, which was of the usual size, and presented externally *several cicatrices*, there was a cavity half an inch in diameter. Its surface was smooth and serous, and it contained a black clot floating in a little blood. The right ovary also contained cicatrices, cavities, and clots. When, therefore, the ovaries exist they give to woman the appearance usual to the sex, and although the menstrual flow may be absent, from the absence or arrest of development of the womb, many of the phenomena of menstruation are often present. Cases, however, occur where after extirpation of the womb, or of its neck, a menstrual discharge takes place from the cicatrix and the vagina. Nature sometimes institutes experiments by destroying particular organs by disease. Thus in the numerous cases of diseased ovaria, where the

complaint involved the whole structure of the gland, and not of one only but of both, menstruation disappeared; and there was often a remarkable coincidence between the complete cessation of the menses and the entire degeneration of the ovaries, so that the progress of the complaint might be judged of by the disappearance of the catamenia.

What nature does by disease physiologists have frequently effected to the lower order of animals; and without entering into long details we shall allude to the curious observations of Mr. Yarrell, which prove that the organisation of the inferior animals may be modified at any time of their existence by the removal of the sexual organs. Having remarked that several female pheasants assumed the appearance and plumage of the male, he found in every case that the intensity of this masculine change was in direct proportion to the extent of lesion of the female organs of generation. The ovary was red, hard, atrophied, the oviduct diseased, and obliterated near its infundibuliform extremity. He found these lesions in a female pheasant, whose plumage was still *female,* from which he concludes that the ovarian lesion precedes the change of plumage. With respect to the male bird, the red appendages, or wattles, do not grow to their usual size, the spurs remain short and obtuse, and the feathers become somewhat similar to the hen's. If the oviduct be obliterated, the development of the eggs ceases; the bird attempts to sing; the crest grows; and short and blunt spurs make their appearance; the plumage resembles that of the male, and the bones of the lower part of the back do not become sufficiently large to give to the pelvis its female development.

Dr. Lesauvage relates—*Gaz. Med. de Paris,* 1851—that M. Desbans had very frequently spayed cows affected with *furor ovarinus,* and which are technically called *vaches taurelières.* Such cows, it is said, "out l'œil hardi, les oreilles dressées, elles inflechissent frequemment les reins, agitent sans cesse la queue qu'elle portent haut, et on remarque aux deux côtés de son origine une dépression qui produit une sorte de retraction de la vulve. Elles sont toujours en mouvement sautant sur les autres sans cesse, ne prennent ni repos ni embonpoint. Dans l'herbage elles fatiguent continuellement tout le betail, attaquent le taureau lorsqu'il vent fonctionner, font de grands efforts pour le remplacer et parviennent même quelquefois à l'éloigner." When the ovaries are extracted from these cows—an operation which M. Desbans is reported to have performed one hundred times in twenty years without one fatal accident—it has the immediate effect of quieting the nervous system, and of disposing them to fatten speedily. This reminds us of the mode of curing mania ascribed to the priests of Cybele: "Qui ante castrationem maniaci erant, sanam aliquanto mentem ab illo recuperant."

But the influence of the ovaries on the female organism has been experimentally shown in women as well as in domestic animals, and it appears that the destruction of the ovaries by artificial means, to serve the morbid jealousy of Eastern despots, is followed by the arrest of that characteristic luxuriance of form in women, and by their

assuming the drier texture, the harder outline, and the angular harshness of men.

Andramytis, or Andramys, and Gyges, both kings of Lydia, are accused by a long list of authors—*Mem. de l'Acad. R. de Chyr.*, vol. iii., p. 515, *edit. de l'Encyc. de Sciences Med.*—of having instituted this barbarous practice, and it might be thought a mistake on their part, for the process of fibulation, were not their assertions confirmed by those of Dr. Roberts, who* affirms that in 1841, being in the vicinity of Bombay, he had an opportunity of examining three female eunuchs, called *Hedjera*, and that, according to the account of an old Bramin, the atrophy of the ovaries was effected by cupuncturing them with needles impregnated with the juice of the unripe *thelpheut.* (?) Dr. Roberts thus describes these women:

"Point de gorge ni de mamelon; l'ouverture du vagin entièrement oblitérée et ne montrant aucune marque de cicatrice...; atrophie complète du tissu cellulaire aux parties génitales très-prononcée sur le reste du corps, quoique cependant à un degré moindre: pas de hanches, c'est-à-dire aussi peu développées que chez l'homme; on eût dit que les branches descendantes du pubis et les branches ascendantes de l'ischion s'étaient réunies et soudées à la place que devait occuper le vagin. Les fesses étaient aplaties, les rotules saillantes: point de flux hémorrhoïdal, point d'hémorrhagie nasale pour suppléer au flux menstruel des époques périodiques; point de désirs vénériens pour l'un ou pour l'autre sexe. Ces femmes étaient grandes, robustes, bien musclées; elles avaient une voix mâle, des mouvements brusques accompagnés de gestes expressifs."

Not satisfied with affirming that the ovaries determine the menstrual flow, many of the experimental physiologists who have thrown so much light upon menstruation, assert that it is invariably caused by ovulation, and always accompanied by shedding of ovules from the ovary. Pouchet and Raciborski, in France; Bishoff and Baer, in Germany; Drs. Robert Lee and Martin Barry, in England, are amongst the warmest supporters of this position. It has, however, been considered premature by many of those who have been able to test its fallacy after careful observation in a large field of inquiry. Thus, in three cases in which Dr. Ashwell had opportunities of examining the ovaria of women who died during the flow of the catamenia, there were no signs of the rupture of Graafian vesicles and the escape of ovules. In one of these cases the woman had menstruated regularly for several years, and yet the ovaria were perfectly smooth, "there was neither rent nor cicatrix marking the site, either of a present or former maturation, and escape of a Graafian vesicle." Still Dr. Ashwell admits the periodic return of ovarian excitement as the condition of menstruation, though this excitement may not always reach the point of maturing and discharging ovules.

Dr. Oldham attacks the ovular theory by another strong ar-

* "Fragment d'un Voyage dans les Provinces intérieures de l'Inde en 1841, par le Dr. G. Roberts, Membre de la Société Orientale de Paris, Chargé par M. le Ministre de l'Instruction Publique d'une Mission dans l'Asie centrale, publié par la Société Orientale. Paris, 1843."

gument: "I know of cases, which I have carefully inquired into, where impregnation occurred at the respective times of ten days, twelve days, and twenty-one days after the monthly periods; and while on the one hand I am quite ready to admit a greater disposition to impregnation shortly after a menstrual period, yet I know of no facts to disprove the opinion that the human female is susceptible of impregnation at any time between her monthly periods."

Dr. Ritchie has attacked the ovular theory in his valuable series of papers, the drift of which he has lately summed up in the following terms—*Edinburgh Med. and Surg. Journal*, January, 1851:—"I have shown in the memoirs referred to, that ova are discharged in large numbers from the human ovaries throughout the earliest infancy, in childhood, during amenorrhœa, pregnancy, lactation, and to the utmost term of old age, without giving rise to a coloured uterine discharge; and, on the contrary, that menstruation may be present for as many as eight or nine times consecutively, without the rupture of a Graafian vesicle, and also that this function can be normally performed for the greater part of the whole menstrual life of the woman, although the Fallopian tubes be so agglutinated to the ovaries, or destroyed in their canals, that they are impervious to an ovule. There are a certain number of instances of women having become pregnant before they had ever menstruated at all; others have had all their children, amounting in a patient of my own to five, without menstruating once; and some, again, have been known to fall with child as long as two years after the menses had finally ceased. For these and other reasons on which I cannot here insist, I believe that the hypothesis now spoken of is no more than a pleasing imagination, which will vanish with the light furnished by succeeding inquiries, and that the efficient cause of menstruation will yet appear, and be generally acknowledged to be *ovarian*, indeed, but not *ovular*."

We published, in our first edition, Mr. Paget's report on the appearances found in the body of Mrs. Manning, as a case telling forcibly against the ovular theory.

Case 8.—Maria Manning had begun to menstruate about twelve hours before her execution. The ovaries were of moderate size, and presented numerous marks of cicatrices, with some small bands and threads of false membranes on their surfaces. In the right ovary, three Graafian vesicles projected slightly on the surface and looked healthy, containing clear serous fluid. A fourth was of very large size, about 3‴ in diameter, and prominent. In the left ovary, one Graafian vesicle was fully developed and prominent. We looked for ova in the contents of all these, but in vain. The surface of the ovaries was generally rather more than usually vascular, but there was no peculiarly vascular spot, nor any appearance of the recent rupture of a vesicle, or the discharge of an ovum. In the right ovary, near the surface, was a small cyst or cavity, containing what looked like a decolorised clot, and bounded by a thin layer of bright yellow ochre substance—an excellent example of a fibro-corpus-luteum of one or more months' date, certainly not more recent. The veins at the lower part of the ovary were large and turgid. The

ovarian ends of both tubes were completely closed. Tracing the tubes from the uterus, they proceeded for about two inches naturally, and were, we think, both pervious. They then began to dilate and to grow thinner, and thus, gradually dilating, they ended in pyriform enlargements, completely closed in, presenting no trace of orifice or of fimbriæ, and not attached to the ovaries, except by some intervening tissue. Each of the enlarged sacular ends of the tubes measured about 1″ by ½″ inch, and its walls were thin, and lined with mucous membrane, which had a ciliary epithelium. They were filled with thick, grumous-looking, and ropy claret-coloured blood, with well-formed blood-corpuscles, all like those of recent blood, and including a very large proportion of white ones, some of which were very large, and contained numerous granules. This blood could be pressed along the tubes to the uterus; but the tubes appeared to have contained none, except at their dilated ends. The blood did not coagulate, and no serum separated from it. The uterus was large, especially at its cervix, which appeared swollen. The os uteri was circular. The walls of the uterus were thick and soft, and their out-surface, about the fundus, had a partially livid hue. The cavity of the uterus was nearly full of black fluid blood, containing well-formed corpuscles, with an ordinary proportion of white ones. In this blood was a small round mass of soft white flocculent substance, about 1″ in diameter, like decidua. It appeared to be formed entirely of cells, like lymph, in various degrees elongated and attenuated, as in the development of filaments of cellular tissues. They are just like those of the deeper layers of granulations, only smaller. The mucous membrane of the uterus appeared pale, but healthy. False membranes were attached to many parts of its fundus.

The closure of these Fallopian tubes accounts for this woman having been barren, though married, and having, notoriously, had frequent intercourse with others besides her husband.—We afterwards learned that she was a woman of extreme sexual passion.

It would seem probable that in menstruation, blood may sometimes flow from the vessels of the tubes as well as from those of the uterus. Certainly the blood in these tubes did not pass into them from the uterus; for, in the first place, there was none in them, except at their dilated ends; secondly, the fluid they contained differed from that in the uterus, in being thick, grumous, and claret-coloured, while that in the uterus was like common venous blood, and contained a larger proportion of white corpuscles.

Such cases indubitably prove that menstruation does not always depend upon ovulation. Hard pressed by these facts, Meckel admits, "that although ovulation never takes place without inducing menstruation, still it does not take place at every period;" but this is evidently an abandonment of the ovular theory, which is equally attacked by what we call remittent menstruation. When the flow occurs regularly for years every fortnight or seven days, is it caused by a fortnightly or a weekly ovulation? We do not believe it. Doubtless at the period of puberty ovula begin to be matured in the ovaria of women, but that these are *only* matured periodically is

contrary to truth, for it has been proved, by the researches of Dr. Ritchie, that the ovula may be matured and discharged during the intervals of menstruation, and even at periods when that function is not taking place. Carus confirms these assertions, by stating that in the ovaria of girls from two to four years of age, he has observed the follicles fully developed, and the ovule floating in the fluid of the Graafian vesicle.—*System des Physiologies*, Von Carl Gustave Carus, Leipzig, 1849, p. 655.

After a careful investigation of evidence we sum up in the terms of a reviewer in the *Medical Gazette :*

"All that known facts warrant is that the two phenomena, menstruation and ovulation, are concurrent, but not necessarily the one dependent on the other. They are both the effects of the attainment of a certain point in female development, and each constitutes an important link in the physiology of reproduction, but an inseparable connexion between them has not yet been demonstrated; the law of periodicity in one does not necessarily infer causation. Menstruation is a periodical function. Ovulation is the constant function of the ovaries—the connecting link, if there be such, between these two functions has not yet been discovered. A relationship, but not the close one of parentage, exists between them."

We shall even go one step further, and admit that since Bishoff, and Pouchet, and Gendrin first drew attention to the coincidence between ovulation and menstruation, the frequency of this occurrence has been more and more clearly established.

The medical mind has been intent upon this interesting subject for the last fifteen years; many have sought to ascertain the truth of the ovular theory in the large hospitals with which Europe is so thickly studded.

We may therefore accept what has been published as the expression of the facts, and while on the one hand, Ecker, Pank, Négrier, Raciborski, Dr. Michel of Charleston, U.S., Dr. Hannover of Copenhagen, Dr. R. Lee, Mr. Girdwood, Dr. Letheby, Mr. Whitehead, and many others, have published cases in proof of the coincidence of ovulation and menstruation, we are only acquainted with Dr. Ashwell's three cases in addition to Mr. Paget's, wherein menstruation was evidently neither accompanied nor caused by ovulation.

The frequent occurrence of ovulation and menstruation being once established, it becomes a matter of practical interest to know in what ovulation consists, but not having ourselves made experimental researches on this point, we appeal to the writings of others.

Pouchet, who has most patiently observed and correctly represented the phenomena of ovulation in sows, rabbits, cows, &c., tells us—p. 134—"Where the vesicle will soon rupture, there appears signs of intense inflammation, the peritonæum and subjacent cellular tissue becomes very red and vascular." And—p. 136—"This intense inflammation has so diminished the coherence of that portion of the ovary which surrounds the vesicle, that it breaks down under the slightest traction, and when the vesicles have attained their full development, their culminating point seems to be formed by a mere

pulp. Sometimes the gentlest traction applied to a vesicle which was but slightly ruptured, will cause it to burst, and to expel the blood-clot which it contained." "In the midst of these widely-torn surfaces there sometimes appears a black patch, which has all the appearance of gangrene." The reader will find depicted—Fig. 1, Plate 8, of *Pouchet's Atlas*—these extensive ruptures, which he has not unfrequently found in the sow, "and which," says he, "coincide with the more intense inflammatory action of the ovary."

In general, the blood exuded from the surface of the vesicle forms a clot which distends it, but Pouchet has sometimes found the capillaries ruptured in the vicinity of the vesicle; and, he adds—p. 137—"two or three times I have found amidst the fimbriæ the whole blood-clot, which had escaped from the very extensively lacerated vesicle."

Now, as Raciborski remarks, in woman the ovarian vesicles never have a diameter less than fifteen or ten millimetres, and contain a blood-clot about the size of a small cherry, it is not impossible that the amount of blood liberated from the ruptured capillaries of the ovaries may be, under certain circumstances, greater than the peritonæum can bear with impunity, and we shall see hereafter that some sanguineous pelvic cysts have this origin.

Thus the most mature follicle becomes surrounded by a mass of hyperhœmic tissues, the stroma round the cell becomes turgid, softened, and ruptured. This rent surface, doubtless, heals without secretion of pus, in the same way that the vast surface, to which the placenta is attached, generally heals without any purrulent secretion. In both parturient surfaces, vascular action is worked up to an inflammatory point, all looks inflammatory, but it is not so unless some pathological stimulus intervenes. The stroma round the cell becomes turgid, softened, and almost inflamed, like the gum over the child's tooth, and we wonder that at times the ovary should then really become inflamed? We might as well wonder that the gums often become inflamed in dentition, since that also is a physiological act.

In admitting that menstruation may coincide with ovarian inflammation we are not single in our opinion, for Gendrin states "that the menstrual nisus may rise to an inflammatory type, causing the ovarian pains so common in women, and the ovarian phlegmons so frequently met with in women who menstruate."

"If an advancing tooth," says Dr. Meigs, "may excite such maladies as are attributed to the dentition in children, what must be the extent and power of complication of the ovary in the monthly act of eliminating the ovulum. And," he adds, "I should think we have greater reason to be surprised at the rarity than at the frequency of ovarian diseases, when we know that this process is for so many years performed every month."

Dr. Jenner, who was the first to unravel the intricacies of the continued fever occurring in London, has assured us that he has several times seen acute ovaritis originate suddenly in the midst of menstruation. In a late instance, during menstruation, pain suddenly occurred in the left side; and it was so acute that the patient

was literally doubled up. By a vaginal examination, Dr. Jenner detected an ovarian swelling. The patient died a few days after; but unfortunately no *post-mortem* examination was made. Hence the anatomical phenomena of ovulation should be present to the mind of the practitioner in cases of deranged menstruation, in cases of pelvic inflammation, and in cases of sanguineous tumours.

Physiologists have puzzled themselves to find the reason of woman being subjected to the menstrual function; we need not, however, here discuss the opinion of our countryman, Emett, who supposes that menstruation does not occur naturally, but is the result of social habits, which do not permit women to enjoy sexual intercourse when they feel the want of it. Dr. Leake accounts for menstruation in the following manner:—"It is manifest that the female organs, after a certain age, are so disposed as to prepare a larger quantity of blood than is necessary for the support and nourishment of the body, which—blood—in the time of utero-gestation is consumed by the fœtus, and after delivery, by the child; but that this redundant quantity might not incommode the constitution during the time a woman is not pregnant, provident nature has ordered it off by the vessels of the uterus once a month." We might, however, ask Dr. Leake why "provident nature" did not subject other females to the same penalty as woman? Is it not better to bow in acquiescence of our ignorance, instead of doling out such uncertain fancies as sterling truths?

If we rightly understand Dr. Ramsbotham, he has lately discovered that "the final cause of the menstrual flow is to nourish the vivified egg, and that when it is not vivified, the menstrual flow passes away by the vagina." An announcement which elicited objections too numerous and self-evident to render it necessary to detail them. We merely object to it on the plea that cases occur similar to that described by B. de Boismont, p. 384, of a lady, who, during her whole life, always menstruated by the *mouth*, and yet had a child. Such cases show, that although the menstrual flow indicates an aptitude to conceive, it is useless for the fecundation or for the nutrition of the germ.

CHAPTER II.

NATURAL HISTORY OF MENSTRUATION.

Physiology is the only sure basis of Pathology.

DEFINITION.—*Menstruation is constituted by an ovarian nisus, manifested by nervous symptoms, relieved by critical discharges, principally from the internal surface of the womb, and recurring according to a monthly type during the reproductive period of the lifetime of woman.*

Besides experimental researches on the remote causes of menstruation, the subject may be studied like any other natural phenomenon. This has been partially done by numerous authors, and in a very satisfactory manner by our friend M. Brierre de Boismont. To this inquiry we have also devoted much time, and shall detail some of the results of our inquiries in the following portion of this work. We shall first point out the law and rule of each of the phenomena of menstruation, and then follow out the deviations from the rule during the whole extent of that period of life which is bounded by the first and last menstruation. We shall thus connect physiology with pathology in accordance with the intricate union of the two in diseases of women; and although the utility of treating the subject in this systematic manner has not as yet struck other observers, the plan will be found replete with interesting and practical results.

The following table will show how each symptom of menstruation may be perverted, so as to assume the character of disease:

TABLE I.

SHOWING HOW THE SYMPTOMS OF MENSTRUATION, FROM HEALTHY, BECOME DISEASED.

		Physiology of Menstruation.	Pathology of Menstruation.
Symptoms of Ovarian Nisus.	Ganglionic Symptoms.	A monthly type.	A remittent type.
		Animal heat somewhat increased.	Slight fever.
		Nutrition healthily stimulated.	Chlorosis.
		Slight flushes.	Frequent and burning flushes.
		Faintness at the pit of the stomach.	Intense epigastric pain.
		Swelling and soreness of breasts.	Mammary neuralgia.
	Cerebral Symptoms.	Headache.	Intense headache.
		Slight pseudo-narcotism.	Intense pseudo-narcotism.
		Nervous irritability and fidgets.	Hysterical insanity and convulsions.
	Spinal Symptoms.	Slight dorsal pains.	Intense dorsal pains.
		Slight hypogastric pains.	Intense bearing down pains.
		Numbness and slight loss of power of limbs.	Local, or general paralytic affections.

TABLE SHOWING HOW THE SYMPTOMS OF MENSTRUATION, FROM HEALTHY, BECOME DISEASED—*continued.*

		Physiology of Menstruation.	Pathology of Menstruation.
Critical Discharges from	The Generative Surface.	A sanguineous flow.	Amenorrhœa. Menorrhagia. Deviated to other organs.
		A mucous flow.	Intermenstrual leucorrhœa. A mucous flow substituted for the sanguine.
	The Intestinal Surface.	Slight looseness of bowels.	Mucous, or bilious diarrhœa. Substituted for the menstrual flow.
	The Cutaneous Surface.	General moisture.	Drenching sweats.
	The Urinary Surface.	Normal urine.	Absence of saline component as in the water of hysterical flow. Great increase of phosphates and lithates.

Before, however, beginning this inquiry, we must consider the duration of the menstrual function, of which we have defined the healthy paroxysms; and as this duration is comprised between the first and last menstruation, let us seek for the dates of these two epochs.

The period of first menstruation is alike interesting to the medical man and to the statesman; for as the fecundity of woman dates from that epoch, its knowledge is an indispensable element of many problems in medicine, and in the science of population; and although it may seem that the precise determination of this epoch has no practical bearings, we shall soon discover that a knowledge of its different dates in different experiments and circumstances not only throws considerable light on the nature and intensity of the powers which advance or retard puberty, but indicates the causes most likely to disturb menstruation, and to produce diseases of women.

The following table shows the period of first menstruation in different races, and in different climates:

TABLE II.

TABLE OF THE PERIODS OF FIRST MENSTRUATION OF 12,037 WOMEN, IN HOT, TEMPERATE, AND COLD CLIMATES.

GRAND MEAN OF ALL COUNTRIES, 14·85.

YEARS.	HOT CLIMATES. Number of Observations, 666. Mean Age, 13·19.				TEMPERATE CLIMATES. Number of Observations, 7237. Mean Age, 14·94.					
Race.*	Hindoo-Gangitic.		Tamulian.	Negro.	Hindoo-Germanic.		Celtic-Hindoo-Romano-Germanic.			
Country.	Calcutta (Bengal).	Calcutta (Bengal).	Deckan (Bombay).	Jamaica.	Corfu.	Madeira.	Marseilles, Toulon.	Lyons.	Paris.	Paris.
Mean Temperature of Country.† Annual.	78·1	78·1	78·8	79·	65·	65·7	57·2 / 59·2		51·4	51·4
Summer.	83·3	83·3	82·6	81·3	79·	70·	70·6 / 72·1		64·6	64·6
Winter.	67·8	67·8	76·6	76·2	52·	61·3	44·6 / 47·4		37·9	37·9
5 to 6	...	...	...	...	...	...	...	...	...	1
6... 7	...	...	...	...	...	...	...	...	...	...
7... 8	...	...	...	...	...	...	...	...	...	1
8... 9	3	...	...	...	...	...	...	...	...	2
9...10	7	...	1	...	1	...	...	...	1	10
10...11	14	3	4	...	...	...	...	5	...	29
11...12	37	17	41	1	5	2	6	14	3	93
12...13	66	17	71	5	6	11	10	26	14	105
13...14	49	...	74	10	3	19	13	47	6	132
14...15	41	...	46	16	4	35	9	50	18	104
15...16	11	...	29	15	3	67	16	76	14	190
16...17	6	...	16	17	4	40	8	79	7	141
17...18	3	...	11	12	4	41	4	58	6	127
18...19	1	...	2	7	3	12	2	38	5	90
19...20	...	...	3	5	...	11	...	21	8	35
20...21	1	...	...	1	...	4	...	9	3	30
21...22	...	...	2	...	...	...	...	5	...	8
22...23	...	...	...	...	...	...	...	1	...	8
23...24	...	...	1	...	...	...	...	...	...	5
24...25	...	...	...	...	...	...	...	3	...	...
25...26	...	...	...	...	...	...	...	...	...	...
26...27	...	...	...	...	...	...	...	...	...	...
27...28	...	...	...	...	...	...	...	...	...	...
28...29	...	...	...	...	...	...	...	...	...	...
29...30	...	...	...	...	...	...	...	...	...	...
No. of Cases.	239	37	301	89	33	242	68	432	85	1111
Mean Age.	12·49	12·37	13·23	15·13‡	14·	15·44	13·86	15·5	13·72	15·42
Indications.	Mr. Roberton: Med. and Surg. Edin. Journal, vol. 64.	Communicated to the Author.	Mr. Roberton: Med. and Surg. Edin. Journal, vol. 64.	Ditto, vols. 58 and 69.	Ditto, vol. 62.	Ditto, vol. 66.	Art. Menstruation, 19th vol. of Dic., in 25 vols. (second edition.)	These. Paris, 25th August, 1835.	Archives Gen. de Med., Oct. and Nov., 1835.	De la Menstruation (Prize Essay), 1835.
Authorities.	Dr. Goodeve. Dwarikanauth dus Bossu.	Dr. Stewart.	A. H. Leith and others.	Rev. J. Elliot and others. Mr. Bowen.	Dr. Tariziano.	Dr. Dyster.	Bouchacourt.	Petrequin.	Dr. Marc d'Espine.	Brierre de Boismont.

YEARS.	TEMPERATE CLIMATES (continued).					COLD CLIMATES. Number of Observations, 4134. Mean Age, 16·41.			
Race.*	Gothic-Hindoo-Germanic.					Gothic-Hindoo-Germanic.			Esquimaux.
Country.	London.	London.	London.	Manchester.	Gottingen and Halle.	Christiania.		Copenhagen.	Labrador.
Mean Temperature of Country.† Annual.	50·7	50·7	50·7	47·7	48·4 / 47·8	41·7	41·7	46·8	38·5
Summer.	57·2	57·2	57·2	68·6	63·7 / 63·5	59·5	59·5	62·9	45·7
Winter.	39·5	39·5	39·5	37·0	33·0 / 32·0	38·8	38·8	32·7	1·3
5 to 6	...	...	...	...	...	...	...	...	...
6... 7	...	...	...	...	...	...	...	...	...
7... 8	...	...	...	...	...	...	...	...	...
8... 9	1	3	...	...	...	...	...	...	...
9...10	4	6	14	...	...	...	...	...	...
10...11	5	18	55	...	...	...	...	1	...
11...12	53	72	67	10	...	...	...	5	...
12...13	90	103	123	19	6	...	...	18	1
13...14	183	215	210	53	18	4	5	107	2
14...15	266	249	311	85	48	7	23	363	2
15...16	291	200	320	97	65	22	31	712	4
16...17	234	166	264	76	65	43	20	694	4
17...18	181	123	158	57	39	31	14	581	3
18...19	105	69	112	26	39	19	11	518	3
19...20	45	26	42	23	21	13	8	347	...
20...21	26	11	29	4	20	13	...	265	...
21...22	8	3	9	...	5	3	...	109	2
22...23	3	1	4	...	2	2	4	71	...
23...24	2	1	1	...	3	...	...	27	...
24...25	...	0	...	...	1	...	...	12	...
25...26	1	1	...	...	...	...	...	4	...
26...27	...	...	...	...	...	...	...	5	...
27...28	...	...	...	...	...	...	...	...	...
28...29	...	...	...	...	...	...	...	...	...
29...30	...	...	...	...	...	...	...	1	...
No. of Cases.	1498	1267	1719	450	332	157	116	3840	21
Mean Age.	14·35	15·02	15·17	15·3	16·20	16·88	16·41	16·78	15·57‡
Indications.	Medical Times, vol. 12.	Unpublished.	Dublin Med. Journal, No. lxxvii., 1845.	Mr. Roberton: Med. and Surg. Edin. Journal, 1832.	Denkwurdigkeiten für die Heilkunde und Geburtshülfe, 11 bre. bd. 2, sl. 1795, ms. 320.	A Government Report on Norway.	Union Medical, Vol. 6. No. 79.	Bibliothek for Læger, list of 3429,—to which Dr. R. has added 411 cases taken by Professor Lewy.	Mr. Roberton: Med. and Surg. Edin. Journal, vol. 63.
Authorities.	Dr. Guy.	Dr. Tilt.	Dr. Lee and Dr. Murphy.	Mr. Roberton.	Osiander and Hohl.	Dr. Frugel.	Dr. Faye.	Dr. Ravn.	J. Lundberg.

* We follow the nomenclature given by our friend Dr. R. G. Latham, in his "Natural History of Man."
† The mean annual temperature, indicated in degrees of Fahrenheit's thermometer, are reduced from Mahlmann's elaborate table of mean temperatures inserted in Humboldt's late work on Central Asia.—*Recherches sur les Chaines de Montagnes et la Climatologie comparée.*
‡ These averages are deduced from so small a number of observations that they cannot weigh against the contrary statements of travellers.

The causes which modify the period of first menstruation may be divided into those which are predisposing and determining. The predisposing causes may be divided into those which are intrinsic, and those which are extrinsic.

By intrinsic causes we mean those which are inseparably inherent in the female constitution—

1st. The parents from whom she inherits physiologically as well as pathologically constitutional peculiarities.

2nd. The race or stock from which she proceeds.

3rd. The national customs, from the dominion of which neither herself nor her family can ever obtain complete emancipation.

I. Family.—How far does the period of the first appearance of menstruation depend upon the period at which that function first appeared in the mother? If the lineaments of the face and the external form of the body may be transmitted, it is reasonable to suppose that the structure of the internal organs may also be hereditary, and that therefore peculiarities of functions may be inherited as well as peculiarities of feature. Morgagni cites a case in which menstruation in both mother and daughter only appeared several years after marriage. Tissot mentions three sisters, in whom cessation came on at the thirty-sixth year, the period at which also their mother had ceased to menstruate. Gendrin knows a family in which all the girls through three successive generations were afflicted with menorrhagia; only one daughter escaped, and she was subject to frequent epistaxis, which only ceased two years after menstruation.

Several instances of hereditary menstruation have come under our observation. Thus: Catherine H. first menstruated between fifteen and sixteen, so did her four daughters. Mary R. first menstruated between thirteen and fourteen, so did her daughter and her granddaughter. Jane R. ceased to menstruate at thirty-five, her mother at thirty-six, and her maternal grandmother at thirty-five. Generally speaking, however, there is seldom any coincidence between the dates of the first and of the last appearance of menstruation in different members of the same family.

We agree with Marc Despine, Brierre de Boismont, and Dusourd, that a delicacy of constitution retards the appearance of menstruation, and that it is, on the contrary, advanced in those in whom the nervous temperament strongly predominates.

We think it possible to go one step further, since we are ourselves often able to guess rightly that, in such or such persons menstruation occurred earlier than in others, and that it makes its appearance every three weeks instead of four. But it is more difficult to describe the characteristics of this peculiar appearance. A spare habit of body, a dark complexion, lustrous eyes, at all times dark circled, great nervous irritability. Such are the external characteristics of a temperament which deserves the name of ovarian temperament as much as a constitution in which the biliary apparatus is predominant merits that of a bilious temperament. Women who present these ovarian characteristics menstruate earlier than others, are most liable to derangements of the catamenial function, which frequently assumes

a morbid type, appearing every two or three weeks. In such women connexion often gives little or no gratification, and, on the contrary, is accompanied by strange symptoms of prostration of nervous energy, accompanied by convulsions or insensibility which defy classification, while headache and debility are experienced on the following day. Physiologists, in accordance with popular prejudice, ascribe to all women who offer the characteristics of the ovarian temperament, great warmth of passion, but this is far too general, inasmuch as the ovarian temperament often exists without any warmth of passion. The sense of sexual pleasure, like all other senses, depends upon the cerebro-spinal nerves, and upon the healthy development of the clitoridian nerves, which may be imperfect while ovarian activity is intense. The fact of the sense of sexual pleasure being in the clitoridian nerves is confirmed by nymphomania having been cured by the excision of the clitoris and nymphæ, an operation which has been successful in the hands of Levret, Antoine Dubois, Richerand, and Marjolin, but in an exceptional case, occurring in the practice of Dr. Lefort—*Gaz. des Hop.*, No. 126, 1852—the cicatrix took upon itself the function of the clitoris, and the unfortunate patient was not cured of her propensity. The ovary, on the contrary, is immediately dependent upon the ganglionic nerves; it is an organ of vegetable life, it vegetates life germs, and is not an organ of sense. But of this hereafter; suffice it to say, that in some women it has an undue action, and tyrannises over the system through life.

II. Race.—All differences in the period of first menstruation have been ascribed to the agency of heat or cold, but it is necessary to ascertain whether the advancement or retardation of the faculty of conception does not depend upon certain original peculiarities of those races which inhabit hot or cold countries.

The late Mr. Walker's remarks upon this subject are too interesting to be omitted, although many of his assertions would require confirmation.

"The early appearance of first menstruation," says Mr. Walker—*On Intermarriage*, p. 6—"is remarkable in the Mongolic, or north-eastern broadfaced variety. Not only in China and Japan, but even in countries much colder than our own, does puberty commence in the female sex much earlier than with us. A French writer asserts that a Kalmuck or a Siberian woman of the Mongolian race is marriageable at the age of thirteen, even in a climate as cold as that of Sweden, whilst a Swedish female is scarcely so at fifteen or sixteen; that still further north, and even on the confines of the icy sea, the Samœides are nubile at eleven, and are frequently mothers at twelve; that the women of Lapland begin to evince maturity at twelve, and that the same appears to be the case with all the races of the polar regions—as the Ostiacs, the Yakoutes, the Kamschatdales, and even the American Esquimaux.

"This precocity has, indeed, been assigned to other causes than that to which I have ascribed it. Virey imagines that the early arrival at puberty amongst Mongolic nations may arise partly from the smallness of their stature, but in a great measure from the nature of their

fish diet, which is supposed to be of a stimulating and aphrodisiac quality, and from dwelling continually in subterraneous places, subject to the suffocating heat produced by the vapour of water poured upon hot stones.

"The inadequacy of these causes, which apply but to few of the Mongolic tribes, is evident to every observer of nature. But no one can notice the large vital system of the north-eastern people without discovering a sufficient cause for this precocity in the vast development of that system. In all the sketches of women of the Mongolic variety which have been furnished by our recent voyagers, the trunk which contains the principal organs of that class is large, the abdomen wide and prominent, the mammæ extensive, and their habits as to food correspond. These natural organic causes apply, moreover, to all the women of the Mongolic variety, whether they inhabit cold, or temperate, or warm climates; and they can alone account for the precocity of all. It is a miserable physiology which, finding an event common to a whole race, must seek, like this of Virey, a different cause for the same event, in every different section of that race."

Professor Webb—*Pathologica Indica,* Part II., p. 261—gives a full account of his experience of the period of menstruation in *British* born children brought up in the Calcutta government school. He found sixteen to be the average, which is strongly confirmative of the influence of race, despite that of climate. This inquiry might easily be carried out in some countries, particularly in America, where the European, the African, and the native or copper-coloured race live under the same climate. In 1850, we, therefore, addressed to many eminent medical men of that country a series of questions relating to the menstruation of the three races, but as yet we have not been so fortunate as to obtain the information we have requested.

It has been stated that Jewesses are very precocious, and their Eastern origin was made accountable for the fact; but in dispensary practice we have been struck by the number of Jewesses in whom menstruation was delayed to the seventeenth, eighteenth, and twentieth year.

Thus, Esther D. first menstruated between eighteen and nineteen; her four daughters at about the same time.

Her sister, between seventeen and eighteen.

Her daughter was married at nineteen, and only menstruated after marriage.

A sister-in-law of Esther D. first menstruated between eighteen and nineteen, and her three daughters about the same age.

The question of race might easily be solved by the practitioners belonging to the Judaic creed; but whether from the pressure of engagements, or from other causes, it is difficult to obtain any information from them.

III. National Customs.—In India for instance, dishonour is attached to the parents of a girl who is not married when extremely young. It is, therefore, the custom to affiance children of seven, eight, or nine years of age. They then reside with the family of their intended husband, and connexion generally takes place long before it

has received the sanction of a religious ceremony. The precocious use of matrimonial stimulus is, no doubt, calculated to advance the period of first menstruation, and it is to the influence of this perverse custom, strengthened by hereditary transmission of what was habitual in the parent, that Mr. Roberton ascribes the incontestably early menstruation of Hindoo women; but this view is too exclusive when we remember that we are told by Colonel Parry and other travellers, " that the beasts have more modesty in them than the Esquimaux, whose licentiousness is only equalled by that of the population of Hindustan." Nevertheless, the mean age of menstruation is sixteen, if not later, instead of twelve, as in India. Besides, if the practice of early connexion brought on the early menstruation of Indian women, how is it that menstruation is retarded beyond the average of temperate climates in Russia, where for centuries early marriages have been customary, a national custom which the last emperors have sought to modify by repeated enactments?

EXTRINSIC CAUSES.

By extrinsic causes we mean those which are external to the female, and of which she is more or less independent, as:

I. Temperature.

II. Habitation.

III. Civilisation.

I. TEMPERATURE.—It has always been admitted, and it still is so, that a high or low temperature acts on the generative process of women as it does on plants, hastening or arresting the budding forth of the germ which separates from the female to prolong the continuance of the species. In this instance, we believe that the current notion is true.

Table II. shows, that while the mean age of first menstruation is,

In Calcutta	12 years,	6 months
In London	14 „	9 „
It is in Copenhagen . . .	16 „	10 „

Mr. Roberton, in his valuable contributions upon the subject of menstruation, denies the influence of heat, and relies on the reports of missionaries in Jamaica and Barbadoes, from which it appears that the negresses menstruate about the same time as the inhabitants of our own country, but we think the observations he was able to procure —eighty-six—were not sufficiently numerous to warrant any conclusions, and as Dr. Marc Despine remarks—*Archives Gen. de Med.*, Serie II., Tom. IX.—" The evidence obtained from missionaries by Mr. Roberton has no more value than the opinion of other non-professional travellers, for he did not give the missionaries *questions* to which the answers of the women themselves might be added, but merely asked these gentlemen their opinion upon the subject." We are informed by Mr. Murray, colonial surgeon at Trinidad, that " negroes seldom know their ages, and that, therefore, an accurate list is almost impossible." We must, then, have other testimony before throwing aside the assertions of numerous travellers, that negresses generally menstruate between the eleventh and twelfth year.

In estimating the influence of cold on first menstruation, Mr. Ro-

berton has attached too much value to the few cases he was able to obtain from Jamaica. In republishing his valuable essays, we think he should have taken into consideration the list of 3840 cases of first menstruation, collected in Sweden by Drs. Ravn and Levy. This list shows that in Denmark first menstruation generally takes place at sixteen years nine months, and this fact offered so striking a contrast to the period of first menstruation in India, which is thirteen, that we drew Mr. Roberton's attention to it; unsuccessfully, however, for he has not noticed this important document—the work of the statistical section of R. Med. and Chir. Soc. of Copenhagen—although he seems to attach considerable importance to twenty-one cases collected by unprofessional hands at Labrador.

To solve the question, it would be necessary to compare the mean age of first menstruation in the negress inhabiting Africa with that of her sable offspring transplanted into other climes. A medical man of the Jewish persuasion might also settle the point with great facility, as his race is unalloyed by other blood, and yet placed under every variety of climatorial influence. We do not, however, think such inquiries necessary to establish the influence of heat upon menstruation, but consider it sufficiently proved by Table II., where the mean age of first menstruation in hot climates is thirteen, and in cold climates sixteen and six months.

On inquiring at what season 388 women first menstruated, we obtained the following results:

In summer	197
In winter	43
In spring	32
In autumn	16
The date was unknown or uncertain in	100
	388

The quantity of the flow was said to be habitually increased in winter by three per cent. of women, and in summer by five per cent., but for the most part winter and summer had no such effect. This influence of seasons on puberty confirms the assertion of Dr. M'Dermott and other travellers, that with Esquimaux women menstruation is often delayed until the twenty-third year, and then only appears in the warmest months of the year. Our results would be interesting even if isolated, but much more so when coupled with those of Mr. Quetelet's extensive statistical inquiries, who found that conception most frequently takes place in May, and least so in October; and Drs. Lastri and Ferrario, from an examination of the books at the Baptistry of Florence, found that within the four hundred years ending in 1845, conception was most frequent during the months of April, May, and June, and least so in September. Such facts give some support to the experience of P. Ægenita Stoll, admitted as true by Dr. Laycock,—that hysteria is most frequent in spring, and they confirm the belief of the Greek philosophers, that the sexual feeling is most ardent in spring, and least so in autumn; or, in other words, that man does not

escape the law common to all animated beings, "that the intensity of procreative power is, to a certain extent, regulated by heat." We must add that, like Dr. Dusourd, we have found chlorosis liable to relapse most frequently in spring, a fact interesting, if, as we believe, chlorosis depends upon defective ovarian influence.

II. Habitation.—The influence of a town or country habitation has been shown by Brierre de Boismont. Thus he found that

	Yrs.	Mon.
The mean age of first menstruation in the country was	14	10
In Paris it was	14	6

Pursuing the inquiry still further, he ascertained that there was a difference in the period of first menstruation in women inhabiting small towns, or the capital of the country, Paris.

	Yrs.	Mon.
Women in small towns . . .	14	9
Women in the capital, Paris . .	14	6

Dr. Ravn reporting on the statistical information derived from medical men practising in Denmark, states the average date of first menstruation to be

	Yrs.	Mon.
In women born in the country . .	16	5
" " commercial towns . .	15	4
" " Copenhagen . .	15	7

The influence of altitude above the level of the sea may have some effect upon the first appearance of menstruation, since Saucerotte found that women living high in the Vosges mountains were subject to floodings and miscarriages, which abated, and did not occur on their removing to the plains. Localities, by their exposure to certain winds, may likewise have some effect; and the remark of Hippocrates was probably true, that virgins become nubile later in towns exposed to cold winds, and that Scythian women not only menstruated less frequently, but less profusely also—of which last assertion we shall hereafter show the correctness.

III. Civilisation renders Russian ladies as nervous as the Creoles, and has great influence in advancing first menstruation. M. Brierre de Boismont has demonstrated this influence in a limited number of cases—53—and found that while the

Mean age of first menstruation was—

	Yrs.	Mon.		
In the noble and the rich .	13	8	in	53 women
In the well-to-do working classes	14	5	in	135 "
In the poor . . .	14	10	in	171 "

The statistical inquiry of Denmark has furnished Dr. Ravn with the following results:

The average date of first menstruation was—

	Yrs.	Mon.
In the higher class in towns . .	14	3
In the middle class . . .	15	$5\frac{1}{2}$
In the lower class . . .	16	$5\frac{1}{4}$

In the country, or farming population, the average date of first menstruation was—

	Yrs.	Mon.
In the rich	14	0
In the daughters of domestic servants .	16	5
In the daughters of the peasantry .	16	8

The results we have obtained in London are very similar to those obtained in Paris by M. Brierre de Boismont, and by my friend Dr. Ravn in Copenhagen.

No. of women.	Social condition.	Mean age of first menstruation.
67	The opulent class	13·45
775	The well-to-do working class . .	14·3

Thus three different observers, two in a temperate and one in a cold climate, arrive at the same results—the strong influence of civilisation on the first manifestations of puberty. Civilisation by its numerous modificatory influences, by its constant appeals to sexual appetites, begets the nervous temperament to which may be ascribed the earlier menstruation, and the more disturbed performance of this important function; whereas, in the lower classes, particularly in the peasantry, menstruation is subject to less anomalies and diseases, a fact already noticed by Stahl and Baglivi. It is then useless to disguise that the educated classes suffer from the effects which ever follow a very high state of civilisation; for as a tree first takes root, then throws off its strength in unlimited florification, so man, at first sober and chaste, as civilisation advances, seeks in every way to extend his power of sexual gratification. The literature of Rome and of Greece, the *Cabinetto segreto* of the Museo Borbornico at Naples, to which no woman can be admitted, shows to what a pitch this was carried in the most civilised periods of polished Greece and Rome; and if, as medical men, we are not aware of this evil tendency of our age, how can we withstand one of the principal causes of the frequency of diseases of women? Every practitioner must have met with many a lady whose abuse of the fashionable pleasures of society had induced extreme nervous irritability, with irregular and profuse menstruation often recurring every fourteen or twenty-one days, and that these are the results of this fashionable existence, is evident from the fact that the opposite condition of the monthly function is induced by a contrary mode of living. Monastic life—we speak of the rule, not of its exceptional abuses—consists in the mortification of the body by abstinence from all sensual pleasure, and in accustoming the mind to be satisfied with religious duties; and Drs. Pidoux and Brierre de Boismont say—that after the first year of monastic life, during which nuns are subject to dysmenorrhœa, the flow becomes painless, seldom lasts more than twenty-four hours, and its regularity seems to partake of that by which all their actions are governed. The complexion becomes chlorotic, and the breasts atrophied. Such are the two extremes between which, as usual, the right course lies.

Determining Causes of First Menstruation.—Besides the predisposing causes which advance or retard first menstruation, there are evidently determining causes. As we are not writing a work on physiology, we cannot fully investigate, though it be necessary to enunciate them, since many of them form likewise the determining causes of diseases of women. Some of these causes are mechanical: such as blows, falls, over-exertion in walking, in jumping or riding, exposure to intense heat in kitchens or wash-houses. Others act more upon the nervous system—such as sudden fright; and others, again, act by stimulating the external organs of generation—such as marriage, cutaneous eruptions of the pudenda, vulvitis, and vaginitis. Many of these causes frequently come into action, so that menstruation appears earlier than nature intended, and then it usually stops for about a year. This is what we have found to be the average date of the regular establishment of the menstrual flow after its first appearance. It may be also given as a rule, that when menstruation first appears late in life it continues regular.

In our little work on "The Preservation of the Health of Women at the Critical Periods of Life," we drew attention to the ill effects of the flow occurring without girls being in any way prepared for its appearance, and stated that in twenty-five per cent. of cases, young women were unprepared for its appearance; that thirteen out of the twenty-five were much frightened, screamed, or went into hysterical fits; that six out of the thirteen thought themselves wounded, and washed with cold water. Of those frightened the flow was checked in seven instances, was never restored in three, and the general health of all was seriously impaired. Of those who washed with cold water, two succeeded in effectually suppressing the flow, which only reappeared after several years, and then at irregular intervals, and was never healthily established.

We therefore recommended, as an hygienic rule, "not to let young persons be taken unawares," little doubting the hearty concurrence of all medical critics; we have, however, met with some who object to it, particularly the Dublin Medical and Surgical Reviewer; but we firmly vindicate our precept by the following case, to which we can add many others should this be insufficient:

Case 9.—Elizabeth F. The catamenia first appeared at thirteen. Taken unawares, she washed with cold water, and stopped the flow. This was immediately followed by great giddiness and headaches. Scarcely a day passed without her bleeding at the nose. At night she would sometimes bleed from both nose and ears to such an extent as to wet through two or three pocket-handkerchiefs. For two years she remained in this state, and menstruation was brought back by repeated cold shower-baths on the head and upper part of the body, while the patient stood up to her hips in very hot water. Menstruation has since always continued irregular. Thus, for two years, the patient had suffered severely from uterine symptoms, and had been given up by several practitioners. The neck of the womb was swollen to three times its usual size, and *ulcerated* on its internal surface. She was under treatment for a year.

As every rule has its exceptions, so there will be some to that of first menstruation not generally occurring in England until the age of fourteen. To most of the recorded cases of its earlier appearance it may be objected that the hemorrhage from the genital organs was not accompanied by the characteristic prodromata of menstruation, but this was sometimes the case. Of menstruation in infancy the following is the best example that has come to our knowledge:

CASE 10.—Desirée Clementine A., of St. Vincent la Rivière—Eure—is a strong child, aged two years and ten months. She is plump, and of a lymphatico-sanguine temperament. The breasts are developed, but the sexual organs are not more so than is usual to a child of that age. For the first few weeks of her life she was delicate, but at four months she became strong, and continued so until the period named, when, *after such symptoms as women generally feel before menstruating*, a sanguine flow came from the vagina. This flow was trifling the first day, more the second, still more the third, and on the fourth it disappeared. The village matrons said that the quantity lost was equivalent to that of a full-grown woman abundantly menstruating. The period passed, and the little girl was like any other, when the following month she became cross, feverish, sleepless, lost her appetite, and complained of pains in the belly. When these prodromata had lasted twenty-four hours the flow appeared, and was repeated every month in a similar way for four months. During the whole time of the prodromata and the duration of menstruation there was headache, subsaltus tendinum, and hypogastric tension, which symptoms were relieved by emollient applications to the belly. Walking was painful to her, for the labia majora were excoriated by the secretion; but when it was over the child was as well as ever. Having thus lasted several months, the secretion which then seemed permanently established, began to vary. It came less regularly, at longer intervals, was less sanguineous, with more and more leucorrhœa, until this became the sole discharge; it gradually diminished, and disappeared a few months ago. At first the child did not appear to suffer from its arrest, but lately she has again experienced the symptom of menstruation, which may reappear, or the pains may be the result of uterine congestion, as supposed by Dr. Marage, who has published the case in the *Union Med.*, Dec. 19, 1850.

DATE OF LAST MENSTRUATION.

As the cessation of menstruation is the only means by which we can in general affirm that fecundity is improbable, the question is one of interest in a medico-legal point of view, and particularly interesting to those whose expectancies depend upon the possibility or the improbability of a woman being fruitful.

In the following table we have placed, side by side, the results obtained in Paris by Brierre de Boismont, Dr. Guy, and by ourselves in London, and it will be seen that although the date of cessation varies from the twenty-first to the sixty-first year, yet at forty-five it may generally be expected. Thus out of Brierre de Brismont's 181 cases, in 114 cessation took place between forty and fifty inclusively, and 199 of our 284 women ceased during the same decimal period.

TABLE III.

DATES OF THE CESSATION OF MENSTRUATION.

Age at Cessation.	Number of Cases collected by B. de Boismont.	Number of Cases collected by Dr. Guy.	Number of Cases collected by Dr. Tilt.	Age at Cessation.
21st year . . .	2	0	0	21st year
24th „	1	0	0	24th „
26th „ . . .	1	0	0	26th „
27th „	1	1	1	27th „
28th „ . . .	1	1	0	28th „
29th „	1	0	0	29th „
30th „ . . .	0	1	4	30th „
31st „	3	0	1	31st „
32nd „ . . .	2	0	0	32nd „
33rd „	0	2	1	33rd „
34th „ . . .	4	1	2	34th „
35th „	6	3	4	35th „
36th „ . . .	7	1	2	36th „
37th „	4	5	6	37th „
38th „ . . .	7	5	5	38th „
39th „	1	7	6	39th „
40th „ . . .	18	33	26	40th „
41st „	10	24	6	41st „
42nd „ . . .	7	24	13	42nd „
43rd „	4	23	13	43rd „
44th „ . . .	13	24	15	44th „
45th „	13	45	26	45th „
46th „ . . .	9	34	16	46th „
47th „	13	25	18	47th „
48th „ . . .	8	38	22	48th „
49th „	7	25	17	49th „
50th „ . . .	12	37	27	50th „
51st „	4	14	17	51st „
52nd „	8	13	9	52nd „
53rd „	2	8	7	53rd „
54th „ . . .	5	2	4	54th „
55th „	2	1	4	55th „
56th „ . . .	2	2	3	56th „
57th „	2	1	1	57th „
58th „ . . .	0	0	4	58th „
59th „	0	0	1	59th „
60th „ . . .	1	0	1	60th „
61st „	0	0	2	61st „
Total . . .	181	400	284	Total.

CAUSES OF THE CESSATION OF MENSTRUATION.

These are predisposing or determining.

On careful consideration of thirty-one cases, wherein menstruation ceased suddenly from the twenty-seventh and thirty-ninth year inclusively, we were unable to detect anything peculiar to their constitution. They were not more than usually affected with disease of the reproductive organs, neither did the diminished powers of the menstrual function indicate less reproductive power, for the average amount of children was a little more than three, in twenty-six out of the thirty-one women who were married.

If women of the same family sometimes cease to menstruate at the same age, it may be merely a coincidence. With regard to the influence of race, climate, country or town life, and civilisation, upon the cessation of menstruation, we have but the contradictory assertions of those who speculate upon too small a number of facts.

The determining causes of cessation are those of first menstruation. Thus falls, or too great exertion of physical strength, sometimes cause the menstrual function to cease suddenly before the average age, so does the sudden impression of cold, so do diseases capable of powerfully modifying the system, such as cholera, and in rare instances, so may inflammatory affections of the womb.

Of the thirty-one women in whom menstruation ceased from the twenty-seventh to the thirty-ninth year inclusively, we could only detect a cause in five cases: the death of a husband, violent physicking, the fright of seeing the House of Commons on fire, getting wet through during the menstrual flow, a fall down stairs when the flow should have appeared.

DURATION OF THE MENSTRUAL FUNCTION OR REPRODUCTIVE PERIOD OF WOMAN'S LIFE.

By this we mean the time comprised between first and last menstruation, and its variations will be seen in the following table :

TABLE IV.

DURATION OF THE MENSTRUAL FUNCTION.

Number of Years.	Number of Cases B. de Boismont.	Number of Cases Dr. Tilt.	Number of Years.
5	1	0	5
6	1	0	6
8	1	0	8
11	1	1	11
13	0	1	13
15	0	2	15
16	4	1	16
17	4	1	17
18	1	3	18
19	3	1	19
20	3	2	20
21	4	3	21
22	3	7	22
23	12	5	23
24	8	5	24
25	8	12	25
26	11	6	26
27	7	18	27
28	6	16	28
29	7	12	29
30	13	11	30
31	13	21	31
32	9	20	32
33	9	26	33
34	7	14	34
35	4	19	35
36	10	14	36
37	6	8	37
38	5	9	38
39	2	12	39
40	7	4	40
41	1	4	41
42	3	4	42
43	1	4	43
44	1	1	44
45	0	1	45
46	0	1	46
47	0	2	47
48	1	0	48
Total . .	177	271	Total.
Mean duration of function, 28·93.		Mean duration of function, 30·89.	

Thus while in the well-to-do-working population of London the mean duration of the menstrual function is about thirty-one years, in Paris, amongst women principally belonging to the same station, the mean duration is nearly twenty-nine years. "It is," says Raciborski—page 33—"for the Jewish women in Poland $23\frac{28}{33}$, and for Polish women of the Sclavonic race $31\frac{6}{33}$, but the data upon which these assertions are founded are not given."

The general average duration of the menstrual function would be about thirty years, which is that of female fecundity, that of each successive generation, three facts which are interdependent.

It has often been repeated that menstruation ceases sooner in those who menstruate earlier, but the unanimity of the results obtained by Brierre de Boismont, Dr. Guy, and ourselves, confirm the observations of J. P. Frank, at Milan, and of Dr. Dusourd, in the south of France, that the duration of menstrual life is longest in those who have menstruated earliest. To better illustrate the fact, we have computed the mean duration of the menstrual function in fifty-eight women in whom menstruation first appeared at the eighth, ninth, tenth, eleventh, and twelfth year of age, and in fifty-four others, in whom it only appeared at the seventeenth, eighteenth, or nineteenth year, and we find that while in the last the average duration of the menstrual function was 29·35 years, it was 33·53 years in the first, the average being for our 271 women 30·89 years; so that there is a difference of nearly four years in the duration of the reproductive life of those who menstruate at an early or late period of youth.

Mende and Burdach both agree, contrary to the general opinion, that menstruation disappears latest when it comes earliest; this assertion is not borne out by a comparison of twenty-five women who had first menstruated in the eighth, ninth, tenth, and eleventh years, with twenty-five women in whom menstruation had been retarded to the eighteenth and the nineteenth, for we found that with rare exceptions the date of last menstruation was latest in those in whom it had appeared latest.

Of the twenty-five women who menstruated early, twelve had ceased to menstruate at forty-four, which was the case with only four out of the twenty-five in whom menstruation appeared later in life.

We have given the rule, but its exceptions now demand a moment's consideration. Rush mentions the case of a woman who was confined for the last time in her sixtieth year, menstruated until her eightieth, and died in her hundredth year.—Leipzig, 8 Bd. xviii., s. 115.

H. Fielig states the case of a labourer's wife, the mother of several children, in whom menstruation ceased at forty-six, to reappear at fifty-nine, and at sixty she had a child.—*J. C. Stark's Obstetric Archives*, Bd. iv. Jena, 1792.

Meissner relates—*Almanach für Aerzte und Nichtärtze Auf das Jahr*, 1817. Rostock und Leipzig—of a woman who first menstruated at twenty, her first child was born at forty-seven, and the last of seven other children at sixty. Menstruation ceased and reappeared at seventy-five, continuing until ninety-eight, then stopped

for five years, again to return at the advanced age of one hundred and four, when in 1812 she was still alive.

In the *Wurtemburg Correspondent*, the case is given of an unmarried woman in whom menstruation occurred regularly until her fiftieth year, from which, to her seventy-fourth, it occurred every three months in the quantity of ten to fifteen drops every time.

Lamotte—*Menville de l'Âge Critique*—relates the case of a woman who had thirty-two children, and menstruated quite regularly up to her sixty-second year. And Mr. Wood states an instance where menstruation returned at sixty-nine. The lady's mother was similarly affected at the same age from the death of a favourite son, and her sister from a fright, at the age of sixty.

In the case of a lady in whom menstruation only became regular at the last years of her life, and who died at seventy-two, Drs. Bouvier and B. de Boismont found the ovaries and the whole of the generative system in the state usual to girls of fifteen to eighteen years of age; instead of being shrivelled and atrophied as is the case in women advanced in life. This throws a light on the preceding instances, and shows the extent of time to which ovarian activity may be prolonged. Neither should the philosopher lose sight of the connexion between the unusual prolongation of ovarian life and longevity.

The ovarian nisus is an essential manifestation of the ganglionic nervous system. When the ovarian nisus is healthily manifested, it indicates a corresponding healthy activity of the other functions of organic life, and when the ovarian nisus is unusually prolonged, it implies a corresponding power of endurance of vegetative life, on which depends longevity.

We regret that the observers did not note the date of first menstruation, for we believe, without as yet being able to prove it, that life is longest in those women in whom puberty is retarded, as it is proved to be the longest in cold countries, where the average date of first menstruation is much delayed. Alexandre de Humboldt is of this opinion, and founds it upon his extensive and comparative study of the numerous races which inhabit South America.

We are not expressly writing on physiology or natural history, so we must omit much that might be given, merely adding that we have found first and last menstruation to be preceded by prodromata, their average duration being eighteen months.

In twenty per cent. of cases, women had been physicked to bring on first menstruation, and, when regularly established, the flow always used to begin in the day in twenty-four per cent. of cases, always at night in thirteen per cent., and in the remainder either at night or in day.

We might now proceed in our analysis of the phenomena of menstruation in relation to diseases of women, but as pending the long duration of the menstrual function it exerts not only a constant but an intermittent action over the system, it is necessary to inquire what are the epochs of its recurrence, and whether healthy menstruation follows any given type.

CHAPTER III.

ON TYPE IN MENSTRUATION.

> If type be important in pathological, is it less so in physiological phenomena?

THE observation of the type is as important in menstruation as it is in the pathology of intermittent fever, or any other disease. In making this assertion, we know that we lay ourselves open to the charge of presumption in giving so much importance to what is considered of slender moment by physiologists, and by those who have even recently written upon diseases of women. Whether the menstrual crisis returns at the second, the third, or the fourth week, they consider it to be physiologically of little consequence, whereas we believe, that whenever menstruation occurs more frequently than once a month, it is the indication of morbid action either in the ovario-uterine organs or in the nervous system.

The language of many nations implies that this function should recur every month, and it is well known that it does so in the majority of instances. Thus, if we refer to B. de Boismont's statistics, we find that out of a hundred women—

In 61, the menses occurred monthly;
,, 28, they occurred every three weeks;
,, 10, they occurred at variable periods; and
,, 1, a healthy woman of twenty-three years of age, they occurred regularly every fortnight.

On referring to our notes, we find that in twenty-three per cent. it did not follow the monthly type; in seventeen per cent. the type was three weeks; in five per cent. it was every six weeks; in one per cent. it occurred every fortnight.

Having established these exceptional cases, we sought the explanation of them, and found that in one-half of the three-weekly cases the type was explained by ovario-uterine disease of an organic nature, or by chlorosis; and in more than one-half of the six-weekly cases the patient's health was habitually bad, owing, in two instances, to uterine disease, which was also the case with the one that assumed the fortnightly type.

If it be argued that in some women menstruation assumes from the first the three-weekly type, we reply that this only proves that it is morbidly performed from the first, or it would retain the same type through life; whereas we have often found that in such women, after successive fluctuations of type, the menstrual function was per-

formed once in every lunar month after marriage, parturition, or an improvement in the general health.

Nature, animate or inanimate, is full of periodically recurring phenomena. The diurnal periodicity of our planetary system is felt by man, for he experiences, by insensible perspiration, a constant loss, which was first discovered by Sanctorius, who established—Aph. lxv., sect. 1—"that even those who are in a perfect state of health, and observe the utmost moderation in living, once a month increase beyond their usual weight to the quantity of one or two pounds, and at the month's end return again to their usual standard in the same manner as women do; but then by a critical discharge of urine, it being either increased in its quantity, or more turbid."

From a patient investigation of the phenomena of menstruation, we are convinced that women are not free from the changes noticed in the male sex by Sanctorius. Previous to each menstrual flow there is generally an unusual deposit of saline substances in the urine; so that instead of viewing the menstrual function as altogether peculiar to women, it should, on the contrary, be regarded as the extension of a phenomenon common to both sexes. Thus, by an admirable simplification of means, that which serves in man to prevent disease or an extension beyond the normal size, is made subservient in woman to generation; that is, to the extension of the human race in time and space.

A further analogy between menstruation and the monthly oscillation in the urinary discharge of man, as observed by Sanctorius, is that—Aph. lxvi., sec. 1—"before the aforesaid crisis happens, there is felt a heaviness in the head, and a lassitude all over the body, which symptoms are afterwards removed." These symptoms are analogous to some of those which precede menstruation.

Remittent Menstruation.—We have given the name of *remittent* menstruation—a term borrowed from the pathology of fever—to that variety of menstrual derangement which is characterised by a change from the habitual type to another, where the menstrual periods are brought nearer, and tend to run into each other. Dr. Laycock has brought forward many facts to show that the periodical changes to which the reproductive function is subject in animals are generally governed by seven and its multiples; and Stahl remarks, as menstruation is a crisis, it is not surprising to find it follow the septenniary march adopted by other critical movements of the body.

When remittent menstruation cannot be explained by an organic cause, we consider ourselves authorised to consider it dependent on some perversion of the nervous force presiding over the generative function, because the women in whom this anomaly is observed, are generally delicate and of a nervous temperament, and because we have hitherto always succeeded in bringing back menstruation to the monthly type by the exhibition of quina—the remedy by which we can so frequently cut short abnormal periodical manifestations, whether occurring in the circulating or in the nervous systems, in the shape of intermittent fevers or of the periodic pains of neuralgia.

If we consider remittent menstruation as a nervous affection of the

ovario-uterine organs, and inquire into its pathology, we shall find that its predisposing cause is the nervous temperament, and particularly that form of it described—page 35—as the ovarian temperament, and in very nervous women the mere emotions attending courtship are sometimes sufficient to bring on remittent menstruation. Thus, women living in large towns, in the midst of all the stimuli of civilisation, are more subject to abnormal types of menstruation than those of the lower orders of society in the country, more particularly the peasantry. In this it is with menstruation as with disease, for Baglivi gives, as the result of his observations—Praxeos Med., lib. ii., c. 12—that in the inhabitants of the country the crisis occurs exactly as it has been said to do by ancient authors, and Stahl—De frequentia Morborum in homine pro brutis—confirms the same observation.

We know not whether to call lactation a predisposing or a determining cause, but in those who menstruate during lactation, the menstrual function which had previously followed the monthly type often occurs every two or three weeks. Inflammation of the neck of the womb, and sub-acute ovaritis, are evident causes of remittent menstruation. We have seen menstruation become remittent from the too frequent application of nitrate of silver to the neck of the womb, but a much more common cause of remittent menstruation will be found in the domestic abuse of purgative medicines; this can be explained by the solidarity of action by which the nutritive and generative intestines are connected, as we shall hereafter prove; and if disturbances of the menstrual function are so frequent, it is because women have not been taught the mischief they bring upon themselves, by treating a natural function as a child does a watch—setting the hands backwards and forwards.

Terminations of Remittent Menstruation.—In our work "On the Preservation of the Health of Women"—p. 48—we affirmed, that "when remittent menstruation is permitted in girls of a delicate frame, there are no means of strengthening such constitutions; the body never attains its proper proportions; increase of age brings with it no increase of strength, and during pregnancy there is a tendency to abortion. This continual drain, by supplying the organs with an inefficient amount of deteriorated blood, may help to produce many diseases of vitiated nutrition, particularly consumption."

This assertion has been fully confirmed by Dr. Burslem, who, in a lately published work on Consumption, has shown that disorders of menstruation are not only symptomatic of tubercular consumption, but may also be its determining cause. Thus, out of 118 consumptive patients, of which Dr. Burslem gives those details which relate to the menstrual function, menstruation was remittent in 22 instances. In 18 out of these 22 cases menstruation adopted a three-weekly type, and a fortnightly type in 4. In 61 out of the 118 patients the menstrual discharge was profuse in the earliest stage of disease, and in 68 leucorrhœa was complained of. In several other young women the menstrual discharge was altered in appearance, being either serous or like green water, and offensive.

It is well known that when once consumption is confirmed, the menstrual flow is entirely suppressed. Even if remittent menstruation occur in constitutions adverse to the development of tubercles, the patients often become particularly amenable to nervous affections.

G. D. is now thirty-six years old; she had a first hysterical attack seven years ago, on seeing a child fall from a window; ever since menstruation has occurred every fortnight. She is now very nervous and hysterical.

Jane O. B. is twenty-seven, and for the last six years the menstrual flow has taken place every fourteen days, so that she is only free from it ten days; constitutionally nervous, she has, since then, become more and more so, and now she is in a state of mental derangement.

THERAPEUTICAL INDICATIONS OF REMITTENT MENSTRUATION.

First. To ascertain by careful examination whether the anomaly is caused by ovarian disease or by inflammation of the neck of the womb, because local treatment will then be required in addition to constitutional measures.

Secondly. To give quinine. We were led by the analogy existing between the menstrual function and intermittent fever, to give bark in the abnormal types of the menstrual function, and we have never found it fail except in a few cases, when the prevention of type was caused by severe inflammation of the neck of the womb. We have given the sulphate alone, in doses of from two to three grains every other night, or every night, on the subsidence of menstruation; or we frequently combine that dose of sulphate of quinine in a pill, with two grains of extract of hyoscyamus, or a quarter of a grain of extract of opium, when nervous symptoms predominate; or with three grains of sulphate of iron when the patient is anemic; or with extract of aloes when it is necessary to prevent constipation.

The following case will show the efficacy of quina in remittent menstruation:

Case 11.—Louisa S. was admitted at the Paddington Dispensary for Diseases of Women, in February, 1852. She is tall, thin, with blue eyes, auburn hair, and a freckled skin; she is a painter's wife, and has always lived in London, and in easy circumstances. After considerable pseudo-narcotism, continuing for nine months, she first menstruated between fourteen and fifteen, and continued regular, the flow occurring every fourth week for three days. She married at seventeen, and never conceived, but continued regular, and in good health, until five years ago, when her husband gave her a venereal complaint, characterised by pimples, sores, and a painful discharge. She was treated for this in a London hospital, but left before she was cured; she subsequently suffered from cutaneous eruptions, and her right leg ulcerated below the knee, where there is still an ulcer about the size of a crown piece. For the last five years she has always been more or less subject to the whites, and menstruation recurs every fourteen days, with headache and great abdominal pain. She is much emaciated, reduced to great debility, the tongue is foul, there is epigastric pain, and frequent eructations.

We ordered two grains of blue pill, with three of extract of rhubarb every night, and the compound camphorated mixture.

Feb. 9.—On examination, the neck of the womb was found painful to lateral pressure of the finger, but there was no other sign of uterine disease—none of ovarian. The patient being somewhat better, we ordered the following pills:

Sulphate of quinine	gr. xii.
Ext. of opium	gr. ii.

Pil. iv., one every night, with the same mixture.

Feb. 16.—After an interval of twelve days menstruation returned with the usual sufferings, and intense epigastric pain.

We ordered, as a pill to be taken at night,

Ext. of opium	gr. i.
" aloes	gr. iii.

A tablespoonful of the mixture immediately before meals, and half a tablespoonful of carbonate of soda in a wine-glass of water after meals.

Feb. 19.—The pains were assuaged. In addition to the other treatment, we ordered an opium plaster to the pit of the stomach.

Feb. 23.—Better. We returned to the sulphate of quinine pills.

March 8.—The patient is better in every respect except in the persistance of leucorrhœa. The period has passed over at which the menstrual flow has shown itself for the last five years, without making its appearance.

The pills and mixture were continued.

March 15.—Improvement continued. The mixture was repeated, and two myrrh and aloes pills ordered to be taken at night.

The menstrual flow came the following morning, a month since its last appearance, and with less pain than the patient had ever experienced. She is stronger and stouter, but leucorrhœa is abundant. Alum injections were ordered, the sulphate of quinine pills were omitted. We saw this patient in January, 1853, and menstruation had ever since kept to the monthly type.

This case seems to us worthy of attention. The debilitating performance of menstruation, which was not caused by any organic uterine disease, had lasted five years, and was modified by six weeks' treatment. The complaint was of a nervous nature, and was cured by thirty-six grains of sulphate of quinine. During the five years, the patient had been under various medical men, but had never drawn their attention to the undue frequency of menstruation. It would be useless to relate other exemplifications of the utility of quinine, as they may be found in the columns of the *Lancet*.*

The same plan of proceeding is also valuable to the practitioner, as a means of facilitating the treatment of chronic uterine disease.

In several cases where the treatment was indefinitely prolonged by the return of menstruation every two or three weeks, the quinine has delayed it to the full month, even when the neck of the womb had been subjected to the irritation of potassa fusa.

* Cases showing the utility of sulphate of quinine. *Lancet*, 1851, vol. i.

In stating that we have never seen quinine fail in restoring menstruation to its normal type, we do not mean to say that the type always continues normal, for in several cases where the ovarian temperament was strongly marked, we have known menstruation return to the three-weekly type on ceasing the exhibition of bark. Since making these therapeutical essays, we have met with two authors who have used quina in diseases of menstruation. Fothergill has done so when menorrhagia coincided with intermittent fever, and he observes: "It has happened that a regular intermittent has been attended by an immoderate flux. In seasons when autumnal intermittents are frequent, such circumstances will now and then happen to patients who have suffered considerable loss about the time of cessation. In such cases bark safely cures both the flux and the intermittent."

Dr. Dusourd has given bark with different effects, and in a totally different manner, to that recommended by us. He says: "I am acquainted with two ladies in whom flooding twice occurred from the administration of sulphate of quinine in enemata. One of the ladies miscarried at the fourth month of pregnancy. Twelve grains of sulphate of quinine had been given in six ounces of a decoction of marsh mallows." He further adds, that in consequence of these facts, he had several times given quinine in suppressed menstruation, and with the desired effect.

Dr. Kennedy mentions as a cure for the fortnightly menstruation, to forestal its appearance by the application of leeches a day or two before its occurrence; but we prefer our own plan.

PREVENTIVE TREATMENT OF REMITTENT MENSTRUATION.

1. The strengthening of the nervous system by the rules laid down in our work on Female Hygiene.
2. The improvement of the blood by tonics and steel.
3. The observance of a judicious regimen during the menstrual crisis.
4. The forbidding the domestic use of purgative medicines, which frequently disturb the regularity of the menstrual type.
5. In general, marriage brings about the adoption of the normal type of menstruation, and parturition has often the same effect.

CHAPTER IV.

ON THE OVARIAN NISUS.

"The epigastric nervous centre is the chief lever of the vital forces."—GALEN.

WE have investigated some of the conditions of the periodical currents of fluids in woman; every current testifies a moving force, and although we shall hereafter form a better idea of the nature of the ovarian nisus by its effects, still we cannot proceed without inquiring into its analogies, particularly as this force is the essential part of menstruation, being often shown by nervous symptoms when not by any flow of the fluids. We have, moreover, ascertained that the ovary is the focus and starting-point of this force. Now, every force in the human body has for substratum a nervous organisation; it is, therefore, in the nerves of the ovaria that this force must reside. These nerves come from the solar plexus, and are part of the ganglionic nervous system, to which must be ascribed the ripening of the germs in the ovary. This is an act of *vegetative* life, for by pressing either ovary we may rupture its vesicles, but not detach its ovules, which is done by the ovary at stated times, and by a preliminary absorption of its dense covering. We must, moreover, bear in mind, that the paralysis of the cerebro-spinal nerves has not prevented the process of ovulation, so that it must be under the influence of the ganglionic nerves; or, in other words, nutrition and generation are subserved by the same system of nerves, on the individual peculiarities of which depend alike the differences of nutrition and menstruation in each individual. Thus, the Hungarian sisters were united at the lower part of the back, and, dying at the age of twenty-two, the abdominal vessels of both were united at the loins, so they had the same blood in their vessels. The uterine function, however, differed as to the period and quantity of the secretion. The blood was the same, but the ganglionic nervous influence was different.

The just appreciation, therefore, of the menstrual force, and of the causes and nature of many diseases of women, can only be gathered from a knowledge of the functions of that system of nerves.

Little is known about the ganglionic nervous system, and that little is often merely classed amongst the curiosities of medical

literature. It is, therefore, indispensable that we should review our information upon this head, for as the ganglionic system of nerves is more developed in woman than in man, the consideration of this system should not be omitted in a work on diseases of women.

The difference of size in the two sexes depends on the greater development of the organs of *animal* life in the male, and as the nerves and ganglia of the ganglionic system in the trunk are in relation with the organs of *vegetative* life, these nerves and ganglia are proportionally larger in women; physiology and pathology likewise show that there is a greater amount of vegetative power in woman, for while the proper development of the testicles at once immutably imparts its characteristic effects to man,—the noblest of created beings,—in woman, the corresponding organs react more strongly on her system during the reproductive period of life, subjecting it to incessant vicissitudes of health and disease. The greater influence of the ovary on woman, the preponderance of the ganglionic system in the female, seems a natural consequence of the perpetuation of the race being principally confided to her, and it appears sufficient to explain the fact of woman being at all ages endowed with a greater amount of vital tenacity than man, and her life being prolonged to a greater length.

From the experiments and writings of the celebrated anatomist Winslow, and those of Bichat, Reil, Broussais, Lobstein, and Wilson Philip, it has been clearly proved,

1st. That the ganglionic nervous system presides over the functions of the heart and arterial circulation.

2nd. That it is intimately connected with nutrition, with the building up and the pulling to pieces of the human body, otherwise its minute filaments could not justly be compared by Scarpa to a spider's web, enveloping in its inextricable mazes the arterial system down to the minutest subdivisions, into which some of their ramifications are so incorporated, that Sœmmering and Berends called them *nervi vascularis.*

3rd. That it is the nervous link by which the principal viscera of the body consent to unity of action.

4th. That it is an independent system, for while it exists alone in the lower animals, it co-exists with the cerebro-spinal system in the higher, though without being modelled after its plan, and with such little dependence upon it that the ganglionic nervous system is found fully developed in infants, and most perfect in idiots.

5th. That it is constantly reacted upon by emotional impressions emanating from the brain.

6th. That it constantly reacts upon the cerebro-spinal system. In health imparting a sense of strength without any sensation referable to the organs of vegetative life; but should *they* be diseased, then the ganglionic nervous system convinces the brain that it is intimately associated with a stomach, a liver, or a womb.

7th. That this ganglionic nervous system has a centre of action —the semi-lunar ganglia, called by Wrisberg and Lobstein the *cerebrum abdominale.*

The development of these propositions will be found in the authors we have mentioned. We shall merely consider the two last, as they are essential to the comprehension of what will follow.

Many facts prove the importance of the epigastric centre of vitality. A slight blow on the pit of the stomach will debilitate the strongest man; a smart blow has often given rise to prostration of strength and to death, as if by lightning, without any morbid lesions being found on opening the body. In Edinburgh, those who make the balls for a game called golf, are subject to obstinate gastrodynia, which arises from the great pressure they are obliged to make upon the pit of the stomach. Ice placed on the pit of the stomach of women in hysterical convulsions will often stop them as effectually as an extinguisher puts out a flame. The same effect is produced by cold water forcibly administered. And may not sudden death, occurring after having drank large quantities of cold water upon an empty stomach, be attributed to the sudden shock to this nervous centre? is it not like a blow to the pit of the stomach? Some women cannot take a tepid bath without feelings of suffocation, when the water reaches the epigastric region. On the other hand, the vivification produced by food or stimulants is so sudden, that it may be asked whether it does not partly depend on the stimulation of the semilunar ganglia.

Dr. Holland alludes to the peculiar sensation about the precordia, familiar to those who indulge in tea and coffee to prevent sleep,—a sensation which bears some proportion to the influence of these fluids in preventing it.

Camphor applied to the pit of the stomach has been known to cure intermittent fever; and do not many remedies act principally upon this nervous centre? "By applying cold to the epigastric region, I have been able," says Dr. Jolly, "to calm cerebral symptoms depending upon gastro-intestinal inflammation."

The recognised benefit of vomitives in a host of complaints may be partly owing to their sudden influence on the ganglionic centre; and the good and evil effects of Broussais's application of leeches to the pit of the stomach is more to be ascribed to its action on this centre of nervous action than to their subduing gastric inflammation—a disease of rare occurrence.

This centre is also one of the foci of pain in the dorso-intescostal neuralgia, the spinal irritation of English and American authors.

We have put these facts together to show that the semi-lunar ganglia have not been lightly called a *cerebrum abdominale* by Wrisberg, Bichat, and Lobstein, and by others long before them; for the great interpreter of Galen during the middle ages, Fernelius, showed the importance of the vital force centred in the epigastric region, and even Galen was so persuaded of its utility, that he called it the chief *lever of the human forces*.

The importance of this region is shown by the erroneous theories which made some medical men place the seat of sensibility in the diaphragm, and by the popular belief that the human passions are

centred in the precordia, whereas the passions merely react upon it as stimulants when they are of an exhilarating nature, or as sedatives when they have a contrary tendency.

We have purposely avoided noticing the strange epigastric phenomena of natural somnambulism and catalepsy, as attested by such men as J. P. Frank, Lobstein, or Petetin of Lyons, whose *naive* account of what he observed is more valuable from the fact of his being unacquainted with mesmerism. The phenomena of what is called animal magnetism must be taken into consideration, and should be more carefully studied on account of the absurdities with which it has been mixed up.

Besides the semi-lunar ganglia, all the viscera of *vegetative* life are provided with nervous plexuses and plexiform ganglia, for where there is a concentration of nervous matter it is fair to infer that there is a corresponding concentration of nervous power; although Van Helmont has been laughed at for insisting on so logical an inference, and for giving a name to this local nervous force. As if it were so very injudicious to set up landmarks in an unknown country.

In health each viscus sends its contingent supply of nervous influence to the central ganglia, which reacts on the brain, causing the energy of health, and those sensations known by the term " high spirits." When one of the viscera becomes a prey to morbid action, by its ganglionic plexus, it reacts on the semi-lunar ganglia which influences the brain. When the disturbance is slight, it is felt as a loss of power, or as what is termed " low spirits," or as a sudden failure of mental energy on the sudden occurrence of a sensation of sinking and faintness at the pit of the stomach. From some slight visceral disturbance, lowness of spirits and unexplained melancholy frequently comes over us like a cloud, and if the cloud does not pass away, what is this but hypochondriasis, or insanity? the cause of which will be sought in the brain by those who only take a partial view of human pathology. Without this preliminary we could not have brought clearly into view the influence of that portion of the ganglionic system which gives its energies to the ovaries, and in which resides the menstrual force. Like other viscera, the ovaria react on the ganglionic centre, and thereby on the brain, but with this difference, that the ovaria have a double action. They have a continuous and an intermittent action, one or both of which may be either healthy or perverted.

1. The continuous action of the ovaries, when sufficiently energetic, stimulates the semi-lunar ganglia, and these the brain. It augments the power of this lever of the vital forces, gives increased energy to nutrition, ripens the body to full perfection, and prompts the brain to the satisfaction of the generative functions.

When the nervous energy of the ovaria is above par, then it reacts too forcibly on the epigastric centre and on the cerebro-spinal system, tending to produce the ovarian temperament, which is not in itself a disease, but the strongest predisposing cause of diseases in women.

When the nervous energy of the ovaria is below par, then the epigastric centre not being sufficiently stimulated, it is unable to pro-

mote the healthy performance of nutrition, the blood is impoverished, and the whole system suffers from a neuralgic affection of the ganglionic nervous system which is commonly called chlorosis.

2. The ovarian nerves assume a periodical action. The menstrual nisus is their function; and while all other viscera, when in health, never intimate their existence to the brain, the ovaria do not healthily perform their function unless it be attended by a certain amount of nervous symptoms. This is the force which, despite the antagonising influences of emotion, cold, and disease, so often punctually propels the menstrual flow. This ovarian force is generally shown by cerebro-spinal pains, and by the passing of blood or mucus from the generative intestine; but this blood is but the *cadaver* of the phenomenon, and merely indicates the unseen nervous propelling power. In confirmation of these views, we may remind the reader that the relief of the menstrual pains is not always in proportion to the quantity of the flow, for sometimes the passing of a small quantity will effectually relieve, while that of a large quantity will not. When the menstrual flow is suddenly suppressed, the nervous accidents which may occur do not depend upon a few ounces more or less of healthy blood not being removed from the vessels, but on the sudden recoil or retrocession on the ganglionic nervous centre of its centrifugal currents, the result is a sudden shock to the brain, which is at times stupified into sleep or coma, at times excited into hysterical delirium.

The nervous symptoms of menstruation are A, ganglionic; B, cerebral; C, spinal; and they have this in common, that they are nervous symptoms like those of the first period of active hemorrhages, or of intermittent fevers. With regard to their intensity, it varies between the slightest pains and suffering so great that it absorbs all the attention of the practitioner, who, losing sight of the cause, has sometimes cut off legs to cure hysterical pains.

In passing these symptoms and their morbid exaggerations in review, we shall be much assisted by our sketch of what we conceive to be the function of the ganglionic nervous system; but with respect to the mechanism of this nervous influence, and the nature of the force which often impels the blood, with such admirable punctuality, it would be premature to decide.

Dr. Mojon—*Revue Medicale*, 1836—boldly asserts that it is electricity, arguing from the following experiment:

If the womb of a woman dying during menstruation be successfully injected with ink, nothing is then observed but the oozing of water in its cavity; but if an electric current be passed through the womb, then a black dew covers its surface without it being possible to perceive any vascular rupture, even with the use of a strong magnifying-glass. Mojon supposes that there is a development of electricity at puberty which is repeated every month, under which influence the blood flows, and that twenty-four days are required for the womb to acquire sufficient electric tension to cause the flow.

This explanation would be very satisfactory if it were proved that nerves influenced the body by an electric fluid, and until this be

proved, it is more correct to consider the menstrual nisus as a nervous force or influence of which the essence is unknown.

THERAPEUTICAL INDICATIONS DURING THE MENSTRUAL EPOCHS.

1. The strength of the menstrual force should be promoted by warmth, exercise, exhilarating emotions, and stimulants.

2. It must not be checked by cold, by over-exertions, by fright, by strong mental emotions, or by medicine. We shall have another occasion for studying the influence of these modificators of the menstrual nisus, we merely conclude with some observations on medicine given at the menstrual periods.

We entirely agree with popular prejudice, and with the almost unanimous voice of the profession, that it is dangerous to administer any strong medicines to patients at the menstrual epochs unless the complaint be of a serious nature, in which case it must be treated without any regard to the catamenial function. Neither should we have alluded to the subject, were not the contrary doctrine inculcated by our friend Dr. Hannover, of Copenhagen, whose views have been published in the *Lond. Med. Gaz.*, last vol., p. 969.

This distinguished pathologist has shown, by a series of most difficult observations, that the menstrual flow is somewhat interfered with by the exhibition of medicines, and still, with apparent contradiction, he advises their unmodified use at the menstrual epochs. He is supported in his opinion by the practice of D. Christenson, of the Almundeberg Hospital, who, whether menstruation be present or not, employs injections of decoction of bark and alum by the vagina three or four times a day in inflammation of the mucous membrane lining the female parts of generation, and it is asserted without ill effects!

CHAPTER V.

ON THE GANGLIONIC SYMPTOMS OF MENSTRUATION.

"Hodie certissime evictum est, quod tot numerosæ sensationes, quæ in epigastrio percipiuntur, neque ad musculos, neque ad vasa, neque ad organa gastrica sint referenda, sed unice ad plexum mervorum gangliosum, trunco cœliaco insidentem, atque a Wrisbergio summo cum jure *cerebrum abdominale* vocatum."

LOBSTEIN.

On taking a comprehensive review of the various stages of the reproductive process, we are struck with the frequency of prostration of strength, as a predominant symptom from which even healthy women suffer. At every recurring menstrual period, at the cessation of menstruation, after connexion, parturition, and during lactation, a loss of energy is felt more or less. It seems as if woman could not perform any of those acts which serve to communicate life, without the momentary loss of some portion of her own vital energy, reminding us of some animals whose life terminates when once they have transmitted it to others.

Sensations of debility and of faintness are some of the most frequent prodromata of first and last menstruation, even in healthy women. To use their own expression, they feel as " if they could faint off." They feel a sensation of "exhaustion and sinking" at the pit of the stomach. It is not pain in general, but an irritating, irksome sensation, from which there is no flying ; in rare cases it is a permanent sensation of heat, or else the patient feels, every now and then, a burning heat run across the chest and through the body ; and then follow profuse warm perspirations from the chest only. These sensations are as frequent at first as at last menstruation, are very distressing in cases of over-lactation, and sometimes arise from connexion, conception, and pregnancy. Fainting is a much more frequent symptom of first and last menstruation than is generally admitted. It was found to have occurred in 14 out of 228 cases by B. de Boismont. Amongst our own patients, A. L. frequently fainted before first and last menstruation, and during each menstrual epoch. C. S. had repeated fainting fits in the year following cessation. In E. W. and in M. A. R. fainting was the only sign of pregnancy.

A lymphatic-looking woman had frequently epigastric pain and fainting fits during the two years previous to first menstruation, when these symptoms became less frequent. They abated after marriage,

but at each of her five confinements, and without losing much blood, she always fainted and remained insensible for several hours.

These epigastric sensations resemble those of hunger, but they may occur soon after a full meal. They do not depend upon gastric inflammations, since the stomach can, even in some of the most distressing cases, digest anything. We may, therefore, re-echo Lobstein's opinion, as expressed in the motto of this chapter, and look on such sensations as indicating a peculiar state of suffering of the ganglionic centre. Nausea, and even sickness, without any sign of indigestion, or of biliary derangement, is also sometimes observed. These feelings are not the result of chlorosis or anæmia; for they may be experienced by the strongest and healthiest women. These symptoms, both local and general, are so troublesome, particularly at cessation and during lactation, that they are what women mostly complain of. They will frequently say that "all the complaint lies in the chest," though they point to the pit of the stomach, and have not a single symptom of chest disease.

HEATS AND FLUSHES.

The symptoms hitherto described are indicative of a concentration of vital energy in the internal organs, and are often accompanied by chills and slight shiverings, as in the first period of active hemorrhage or intermittent fever; but as with these, a period of reaction soon comes on, and then women suffer from heats and flushes. Their starting-point seems to be in the epigastric region; for women feel the blood start from there, spread over the chest, or more frequently over the face, which becomes suffused and hot. We have heard women compare their sensations to burning steam rising from the pit of the stomach.

The theory of blushing, as given by Dr. Burgess, applies also to the heats and flushes of menstruation; but with this difference, that while in blushing it is the brain which incites the epigastric centre to pour the blood into its capillaries, the epigastric centre does so of its own accord during disturbances of the menstrual function, and particularly the change of life; and "there seems to be a kind of momentary stagnation of the nervous influence in the præcordial region. It is, therefore, with strict accuracy that John Hunter has applied to this part the expressive designation of 'the centre of sympathies.' At the epigastric centre, the nervous impulse, or 'spiritus cerebri,' as Boœrhave terms it, seems to pause—'Donec aptus evadat fluere per vascula ultrâ imaginationem parva omnia'—*Institutiones Medicæ*, p. 276—that is, until by repeated impressions from the sensorium, it becomes, as it were, overcharged with feeling, when suddenly there is an indescribable sensation of *relief* perceived by the individual, as if an oppressive burden was removed. The partially restrained respiration becomes free again, which is announced by an almost imperceptible *sigh*, and *now* a peculiar glow is felt over this region, which is perceived gradually rising from the precordia, not unlike the *epileptic aura*, through the chest and neck; the heart still sympathising in the general emotion, and at length the flash bursts forth upon the cheek in a 'living blaze of blood.'"

Girls, before, and long after puberty, are little troubled with these symptoms; they belong to the fully-grown woman, and then often occur with menstruation or with menstrual irregularities, or with ovarian or with uterine disease. But it is when menstruation becomes irregular previous to its cessation, that this symptom is most frequently observed, and most tedious to treat.

Practitioners will remember how often pregnancy increases the heat generating powers of women. One patient told us, "When in the family way, the coldest weather is too hot for me."

Women justly distinguish the dry flushes from those which are immediately relieved by perspiration, and by imitating nature in this we have often given relief, as we shall show. The dry flushes are the most troublesome symptoms, recurring on slight exertion, or even when reposing in bed.

Besides this partial increase of heat, Stahl, Bordeu, and Lordat have observed menstruation to be accompanied by shivering fits, paleness, stiffness of limbs, in fact, by all the signs of active hemorrhage and fever. We have seen first menstruation preceded by these symptoms; they are also sometimes met with at the change of life. When occurring during regularly established menstruation, they are most likely caused by some serious disturbance of the ovario-uterine organs. Dr. Julius, of Richmond, related to us a case which illustrates this, as well as several other points of the pathology of menstruation:

Case 12.—A young lady, aged seventeen, born in India, well grown, but anæmic, full of vivacity, but not hysterical, menstruated at eleven, has been regularly so, and has led a life of fashionable dissipation. For the last four months menstruation was regular, but very scanty, attended by habitual pain in the ovarian regions, and loss of power in the spine, with spinal pain.

The singularity of the case is, that for the last few months every other menstrual period was preceded by all the symptoms of low fever; the tongue was dry and black, and the motions dark, tarry, and fœtid, although the bowels were kept regular by aperients. As soon as menstruation appeared, all these symptoms vanished.

This was an exaggeration of the slight febrile movement which so often attends each epoch, and is another instance of a too great ovarian influence on the spinal cord. Under steel and quinine the patient got well, but was soon after much troubled with palpitation.

THERAPEUTICAL INDICATIONS OF GANGLIONIC NERVOUS SYMPTOMS.

1. To treat the case by local applications, as well as by sedatives internally given, whenever the patient complains of a "fainty feeling," or "of sinking at the stomach," or "of having no inside." In such cases we prescribe either a pitch plaster, or a belladonna, or opium plaster, or one made so as to embody from five to ten grains of opium and the same quantity of camphor to the square inch. Such applications to the epigastric region are so often said by the patients to give great relief, that we believe that sedatives thus applied to so important a centre of nervous force must be worthy of an extensive trial.

2. To ensure the right performance of menstruation during the reproductive part of woman's life.

3. To relieve the oppression of the internal organs, brought on by cessation. The dry skin and hot flushes require sudorifics. The bowels may require repeated purgation.

When the sufferings at the pit of the stomach are intense, the ganglionic centre reacts on the brain, and cerebral symptoms arise, which baffle all the endeavours of the practitioner who does not consider them from the point of view we now advocate. We shall exemplify these singular complaints by extreme cases, which alone can throw light upon the more common but less intense symptoms of the same nature.

Case 13.—A lady, aged twenty-seven, of middling stature and embonpoint, with a dark complexion, grey eyes, and dark brown hair, menstruated at thirteen, after suffering several years from pseudo-narcotism and sick headaches. Menstruation continued from the first, but was never regular, sometimes occurring every two, and at others, every three weeks. It varied also in quantity, being sometimes abundant, at other times scanty, but was unattended by pain until the accomplishment of the fourteenth year, when the pains were frequently very severe. She married at twenty-four. Marriage increased the amount of the flow, and conjugal intercourse was for the first year always immediately followed by a state of stupor and complete unconsciousness, which was the more singular, as no symptoms of hysteria had ever been noticed before. Conception took place eighteen months after marriage. Lactation was impossible. The menstrual flow returned three months after parturition, the flow and the pain were less, and when the constitution was under the influence of sulphate of quinine, it assumed the monthly type, but fell back into the three-weekly as soon as that was discontinued. During the prevailing fogs in the winter of 1850, the patient caught a severe cold and cough, but for several days no remedial measures were adopted. She had a pain at the pit of the stomach. Her appetite was not amiss, but she complained of a sense of stoppage when the food was about to enter the stomach, a little above the precordia. As we learnt that menstruation was expected, that the usual flying abdominal pains had already been experienced, and that there was leucorrhœa, we thought that the menstrual flow would bring relief, so did not order any medicine. We were sent for, however, in the night, and found the lady struggling with a suffocating pain, referred to the pit of the stomach. The same pain, but centupled, and which was sufficient to make her shed tears. Hot applications relieved the pain, and sleep supervened. Considering that there was no fever, nothing but pain, and that probably connected with menstruation, we determined on giving large doses of opium, and ordered half a grain of acetate of morphia, in two ounces of distilled water, a teaspoonful to be given every hour. We applied a plaster of opium and camphor to the pit of the stomach, and a plaster containing belladonna with oil of savine and rue to each of the ovarian regions. The pain abated, the patient could eat without impediment,

but for some days the pain returned at intervals, notwithstanding four or five teaspoonfuls of the solution of morphia were daily taken. The flying abdominal pains became more intense, and menstruation, paler than usual, appeared three weeks after it was due. The abdominal pains, the leucorrhœa, the two sudden gushes of water, which the patient stated came away from the womb at two days' interval, after severe labour pains, induced us to believe that this case was one of menstrual arrest, by the acute bronchial affection, and that it produced the intense pain of the solar ganglia. We have been consulted about the same patient again, on account of alarming cerebral symptoms, produced by similar menstrual derangements.

The intimate connexion between this epigastric pain and menstruation, was shown at the next epoch. After having suffered for several days from pseudo-narcotism, colics, &c., she awoke one morning with violent pain in the epigastric region, which, after having lasted an hour, went away, and was immediately replaced by intense pain in the dorsal region of the spine; this pain seemed to descend gradually to the sacrum, and then the menstrual flow began. The pain, after this, gradually diminished, and was succeeded by pains in the thighs and knees. The urine was then, as always during menstruation, very scanty, and previously it had been very thick.

This epigastric pain was so evidently connected with menstruation that it often came as its prelude, but has not done so of late.

It was a nervous pain, relieved by pressure, and often intense enough to make a strong-minded woman cry. It was of a suffocating nature, and as it may have coexisted with a perfect state of the digestive organs, it cannot have been attributed to them, nor to any spinal affection to which the patient was not liable. It was a result of deranged menstruation, but it could not be properly called hysterical, since the patient had no hysterical symptoms.

Ever since the occurrence of this pain the patient has been liable to a spasmodic affection of the pharynx and esophagus, which she calls "her stoppage."

She will sit down to a meal with great appetite, and all at once will feel as if the food would not go down; and then it stops for a time, or else she is obliged to bring up sometimes the whole dinner, generally a few mouthfuls only, of food or of ropy mucus; after which she will return to table and eat a hearty meal.

Cold meat, bread and cheese, very cold drinks, are more likely to make it come on; whereas savoury dishes and warm drinks usually prevent it.

Of late the patient's constitution has improved, and menstruation has been more regular; the epigastric attacks less frequent and less severe; and the "stoppage" less frequent.

Treatment.—Regular habits and hours are enforced, the bowels are kept regular; the patient takes thirty or forty drops of Bullock's syrup of citrate of quinine and iron twice a day. She never takes anything cold, and at dinner her bitter ale is warmed, and has added to it twenty grains of bicarbonate of soda. If the stoppage threatens, she takes a glass of ginger tea as hot as possible;

and lately the *epigastric* pain has been warded off at its first intimation by a teaspoonful of the aromatic spirits of ammonia, taken in a little water.

In other and less enlightened times, when a very long chapter was devoted to asthma, such a case might have been described as hysterical asthma, whereas the disease has little in common with either asthma or hysteria.

In the following cases the symptoms were less intense, but similar:

CASE 14.—Maria G., of a sanguine constitution, is now sixteen. She first menstruated at fourteen, but always irregularly, every two, three, or six weeks, and with great cerebral and abdominal pains. On going to Scotland the flow stopped for four months, and without any other cause, she was taken with a violent pain at the pit of the stomach; the pain returned two or three times a week, and though at times less intense, was constant. It was described as a gnawing pain, worse from sitting upright, or from walking. The tongue was clean, the bowels regular, and appetite variable. These symptoms disappeared by the use of sedatives, and on setting right the menstrual function.

Isabella B., a healthy-looking girl of eighteen, after sudden suppression of menstruation, first felt, twice a day, faintness in the epigastric region, and then a violent pain in the same part. This is relieved by lying down, and by vomiting. She brings up mucus, and then begins to eat again, for her appetite is keen.

S. E., aged twenty, a delicate girl, in whom menstruation is regular, except at the last epoch, when, instead of the menstrual flow, there came violent epigastric pain, increased by pressure, by moving, or by eating. She vomits clear water; the breasts are painful.

The only similar case of which we have read, is that related by C. M. Adolphus—*Art. Acad. Nat. Cur.*, Tom. II.:

CASE 15.—A woman, after two years of imperfect menstruation, became subject to periodical cardialgia, recurring immediately after taking food, lasting for two hours, and sometimes producing syncope. Many plans of treatment were ineffectually tried, and the patient was at last cured by repeated bleeding from the saphena vein and pediluvia. Analogous cases are alluded to by authors under the common name of hysteria, but without sufficient details.

Thus Sir B. Brodie speaks of two ladies subject to the ordinary symptoms of hysteria, in one of whom the slight pressure of the finger on the precordial region brought on a paroxysm of suffocation and constriction of the chest, while with the other lady the same act caused convulsions similar to those of chorea.

The next case exemplifies some of the singular ganglionic phenomena occurring at the change of life.

CASE 16.—Sarah B. applied for relief at the Paddington Dispensary, on September 8, 1851. She was forty-five years of age, of a sanguine temperament, tall, stout, with dark hair, and hazel eyes. She had been a monthly nurse. After two years of prodromata, of which loss of memory was the principal symptom, she first menstruated between seventeen and eighteen. The function was regular

every four weeks, but was always accompanied by a good deal of spinal pain, pseudo-narcotism, lowness of spirits, and the milder symptoms of hysteria. She married, had children, and menstruation went on regularly until a year ago, when it suddenly ceased. A tendency to headache and heaviness were the only premonitory symptoms of cessation, but since the flow has stopped she feels "stupid," "bewildered," "forgets where she puts things," is subject to low spirits, and to involuntary tears. There has been an immunity from spinal and hypogastric pains. She suffers from intense heats and flushes on the face, but has no perspirations. She complains of a slight bearing down, and of leucorrhœa. The urine habitually clear, deposits abundantly since cessation. What most troubles her, is a distressing sensation at the pit of the stomach, which first appeared when menstruation ceased. She says that she feels as if there was something swinging in her, and that this is worse after meals, when something seems to fly to the head, making her feel dizzy and stupid. She compares her sensations, when in bed, to "a tub rolling to and fro within her." When walking and turning a corner, she feels as if losing her centre of gravity. The sensation is accompanied by uneasiness in the region of the bladder, by no choking, but by a strange feeling in the throat; she has no palpitation, the pulse is weak and intermittent, and there is no preternatural action of the heart or of the aorta. Having consulted several gentlemen, by one of whom she had been bled and blistered, while another told her that what she complained of "was a parcel of nonsense," she sought relief on September 8th. We ordered the compound camphorated mixture, a tablespoonful to be taken three times a day, before meals, fifteen grains of bicarbonate of soda, to be taken in a little water, after meals, and a teaspoonful of the following powder, to be taken with a little milk at night:

Flower of sulphur, two ounces,
Biborate of soda, two ounces,

and a large opium plaster to the pit of the stomach.

On the 15th of September she was a little better in every respect; but was worse on the 25th, and had been much troubled by dry flushes in the face. The treatment was continued, with the addition of two scruples of ipecachuana to the sulphur powder. On the 27th she could hold up her head, and she was more comfortable in every respect, except the epigastric symptom. On the 20th of October she was much better in the head, could bustle about, and when in bed, or when quietly lying down, she does not feel the epigastric swinging; but it returns on getting up. The improvement coincided with the appearance of continued, though moderate, perspirations.

Nov. 13, the patient was discharged cured; she felt no epigastric sensations, and was quite comfortable and happy.

Sudden cessation, in absence of all the spinal suffering generally met with, strongly reacted on the ganglionic centre, and that on the brain. The patient was cured by sedatives and by gentle and continued perspirations.

Our next case will illustrate other ganglionic symptoms, as they

occur in lactation; for the similarity of symptoms point to a common origin, to the disturbance of ovarian nervous energy, reacting first on the *cerebrum abdominale*, then on the brain.

CASE 17.—Elizabeth H., aged thirty-two, tall, thin, with a sallow complexion, brown hair, and hazel eyes. After twelve months of pseudo-narcotism, first menstruated at fifteen, and continued regular every four weeks, suffering little in the back, but much in the head. She married at twenty-two, has been pregnant eleven times, and miscarried seven, from some slight emotion. When admitted to the Dispensary, on the 12th of October, 1851, she had been confined two months, and had plenty of milk. She complained of an epigastric "sensation of weakness, but not downright pain." It sometimes lasted the whole day—sometimes only came before or after meals, it was not increased by worry. She felt in the throat a sense of stoppage and a choking feeling, particularly on taking liquids; but she did not retch. She was heavy, stupid, forgetful—and inclined to sleep. Sometimes she had fits of laughter or of crying, and although in every way comfortably off, she was distrustful of everybody, and very jealous of her husband—circumstances quite contrary to her usual character.

We ordered the compound camphorated mixture, as in the previous case, a belladonna plaster to the pit of the stomach, and as much food as she could take; but the symptoms remained the same, until the child was weaned.

This woman was in a perfectly sound state of mind and body previous to her confinement, but after strange epigastric sensations, experienced the first symptoms of insanity.

Dr. J. Conolly considers that insanity, so frequently brought on by lactation, is merely the result of weakness consequent on poor diet. We have so often seen *impending* insanity in nursing women who were well fed and seemingly in good health, that in such cases we believe mental derangement to be a result of a morbidly affected ganglionic nervous centre reacting on the brain.

CASE 18.—The following case will throw some additional light on the question:

Paul Dean, aged twenty-five, is short, sturdily built, with blue eyes, fair hair, and sanguine complexion. He is a butcher, and was admitted at the Farringdon Dispensary on Sept. 2, 1852. He had always enjoyed good health, until two years ago, when, after drinking hard, he felt a sort of beating at the epigastric region, then a violent palpitation, followed by swimming and strange sensations in the head, great prostration of strength, and he was obliged frequently to lie down. He did not foam at the mouth and bite his tongue, and was quite conscious; but felt as if his strength was leaving him. Ever since then the fits have returned, every week or every month, always beginning by the strange sensation at the epigastric centre, and followed by palpitation. At all other times the action of the heart is natural. There was no sign of bodily ill-health, but he looked anxious, and carried his head as if a heavy load were on it. The pulse was weak, the debility great.

We gave him the compound camphorated mixture, ordered every other night a pill composed of three grains of blue pill and extract of henbane, and a pitch plaster on the pit of the stomach. We thought the man exaggerated his state, but having witnessed one of the attacks, we entered more fully into his case, and in addition to the mixture, prescribed a large belladonna plaster to the epigastric region, and two pills of sulphate of iron to be taken three times a day, after meals. After a month's treatment, he looked a different man. He suffered no more from cerebral fits, but still felt after meals great fulness at the pit of the stomach, and a pulsation there, which made something rise, and a little food was quietly brought up. On leaving off the steel, there was a marked recrudescence of the nervous symptoms, which again abated after he had taken the steel for a few days.

Chlorosis.—This is an affection peculiar to women. We have already alluded to it as being a disease of the blood, brought on by a neuralgic affection of the ganglionic nervous system. We believe it to depend upon deficient and perturbed ovarian action—an assertion difficult to prove from *post-mortem* examinations: nevertheless, Raciborski observed, in the case of two chlorotic girls, who died between the ages of sixteen and seventeen, the Graafian vesicles, though as numerous as they should be at the period of puberty, were of extremely small size; and in eight young women, in whom the imperfect establishment of menstruation coincided with consumption, Dr. Dusourd found the ovaries softer and smaller than usual, as if withered; and in two out of the eight they contained tubercles.

Chlorosis and amenorrhœa, although often coinciding, are not synonymous, since in some cases of chlorosis the menstrual flow is scanty, and at others abundant. Chlorosis is most frequently met with at puberty, and during the first years of uterine life.

Those who have been subject to chlorosis, may relapse during pregnancy, but it seldom originates during that state.

Women, at the change of life, often present many of the symptoms of chlorosis, the blanched skin and conjunctiva, the weak pulse, and sometimes palpitation and bruit de diable in the carotid arteries. Chlorosis is often accompanied by the local ganglionic symptoms previously described.

Further details relative to chlorosis will be found in other works on diseases of women; for instead of transcribing the many excellent things that one author copies from another, we desire to withdraw the study of diseases of women from the traditional fetters by which it is cramped, from the amenorrhœa, the dysmenorrhœa, the menorrhagia, and other generalities which both foster and cloak ignorance, and by a more comprehensive view of the diseases of women, to throw the light of modern physiology on this interesting department of medicine.

THERAPEUTICAL INDICATIONS OF CHLOROSIS.

1. To investigate the patient's hygiene, and her mental and moral, as well as her physical condition.
2. To treat this defect of the vegetative process by the local appli-

cations already mentioned, to the known centre of vegetative power—the *cerebrum abdominale.*

3. To give tonics and ferruginous preparations.

Our plan of treatment does not differ from that generally prescribed, except, that we think it well to begin by producing a decided shock on the nervous system of nutrition by an emeto-cathartic and then to give steel and bitters; but if we find that the appetite does not improve, and that the bowels remain sluggish, we put aside steel and bitters, and seek to break in on a perverse concentration of forces by giving another emetic. If emetics act so powerfully in such cases, it is by lowering the intensity or modifying the mode of distribution of the innervative force; but even if this explanation be not admitted, we feel assured that if the plan were followed, the treatment of chlorosis would not require so long a period as it frequently does. Our practice is confirmed by that of Dr. Burslem, who states that two or three emetics administered in the incipient stages of phthisis, when followed by iron and cod-liver oil, have been the means of restoring the menstrual function to regular action, and of arresting the disease.

MAMMARY SYMPTOMS.

In woman the mammary glands are so far removed from the organs of generation, that we may well admire how they can be knit together by strong sympathies, and the more so, as we look in vain for voluminous nerves connecting the breasts with the ovaries.

If such nervous cords of communication do not exist, it shows that they are not required by the sympathetic actions of vegetative life. Without undervaluing the influence of the inosculation of the epigastric and mammary arteries in the production of mammary symptoms, we think right to ascribe them principally to the ganglionic nerves which, travelling along the ramifications of the vascular system, and plunging into their terminations, are the media of communicating that harmonious action by which the various organs of vegetative life seek to maintain the preservation of the individual, or the maintenance of the race.

The ovarian nisus maintains the human race not only by determining the phenomena of generation, but also by its influence over the glands destined to supply the infant with its first food.

This influence of the organs of production over the breasts, although generally admitted, is not sufficiently attended to; and in proof of this we name the second edition of a voluminous work on inflammation of the uterus, in which the author omits all mention of the mammary symptoms by which it is frequently accompanied.

In addition to what we have already stated respecting the influence of the ovarian nisus on the development of the mammary glands, we may observe that the first development of the breasts coincides with first menstruation, and that their development is in proportion to the healthy or unhealthy mode in which puberty is established. Moreover, this influence of the ovarian nisus over the breasts is twofold, as was its influence over the whole system, being both permanent and

intermittent. The ovarian nisus shows its permanent action over the breasts by their full development coinciding with the normal action of the ovaries, and *vice versâ*.

The periodical exacerbations of the ovarian nisus often react on the mammary glands. Thus, out of 419 women interrogated, the breasts were said to be habitually painful during menstruation in 169; and B. de Boismont has noted this occurrence in 100 out of 360 women. With regard to the nature of the mammary symptoms, they varied considerably. A periodical swelling was the most frequent symptom, generally uniform, sometimes accompanied by local engorgements, as they were said "to feel hard," "in knots," or "lumpy," and the superficial veins became more apparent. The mammary swelling was generally painful, though in some cases there was "no pain, but only enlargement."

With regard to the nature of the pain experienced, it varied according as the breast itself or the nipple was the seat of pain. The breast itself is generally spoken of as being "tender," "sore, as if bruised," or of being subject to an "aching," "gnawing," "dragging," "shooting," or "throbbing pain."

The nipples were frequently swollen, and became redder, darker, and sometimes secreted a little saline fluid. Their pain was generally described as "smarting," "tingling," "darting," "grinding," or "pricking pain." "Twitches, or pins and needles," are sometimes complained of, and the pain in the nipples frequently experienced by a strong-looking woman was so great as sometimes to cause her to faint. This will remind the reader of the agonising pain sometimes experienced by those who suffer from sore nipples. Married women compare sometimes the breast pain of menstruation to the draught of milk. In five of those who experienced the mammary symptoms, one breast alone was habitually affected, without any reason to explain this peculiarity.

Mammary symptoms generally precede the menstrual flow by a day or two, or occur during the first days of its duration. Their absence generally coincides with a menstrual flow of short duration, and of an ovarian nisus below par.

When the menstrual function is painfully performed the mammary symptoms are frequently increased; and sometimes, without this being the case, a neuralgic affection of one or both mammary glands arises in the midst of a menstrual epoch, and continues for months, with exacerbations at each recurring catamenial epoch. The breast is uniformly swollen, without increase of heat, and the pain is great, and much increased by moving the arms. We have seen this singular affection in young women of the healthiest constitution, and in whom it has resisted the long-continued application of various narcotic preparations.

Pains and swelling of the breast sometimes occur during the dodging time, and may help to make believe that pregnancy has taken place. In two of Dr. Kirby's cases of mammary irritation the patients were fifty years of age. It is well known that in general the mammary glands become atrophied after the cessation of menstrua-

tion, although the breasts may appear voluminous from the deposition of fat in their surrounding cellular tissues.

With respect to mammary irritation, we suggest that the state of the menstrual function should be always carefully noted by those who record cases of this description. Thus, out of four cases lately recorded by Dr. Kirby—*Dublin Medical Press*, Dec., 1852—this is omitted in three.

In some women the breasts are always painful after connexion; and Dr. Montgomery has admirably shown by what various modifications they indicate that pregnancy has taken place.

We shall see that the painful swelling of the mammary glands is sometimes a symptom of ovaritis, of chronic ovarian tumours, and of all uterine affections, whether of the body or neck of the womb. When impelled to action by diseases of the reproductive system, the breasts frequently secrete mucus and sometimes a milk-like fluid.

The influence of the ovaria in the production of mammary tumours is a matter for investigation. In the case related by S. C. Huston—*American Jour. of Med. Science*, Aug., 1834—it is fair to suppose that the enlargement of the ovary produced the hypertrophy of the breast.

In this case the mammæ enlarged much more than usual at first menstruation, and became enormously hypertrophied in the following years of virgin life. On opening the body the ovaria were found to be larger than usual, and apparently diseased; the uterus did not exceed the ordinary size for females of the same age.

THERAPEUTICAL INDICATIONS.

1. The avoidance of pressure from ill-made stays.
2. The gentle anointing of the breasts with camphorated liniment.
3. The application of a cotton-wool poultice.
4. The insurance of healthy menstruation.

CHAPTER VI.

CEREBRAL SYMPTOMS.

Should not hysteria be the key-stone of mental pathology ?

The influence of the ovario-uterine organs on the brain and on the mind is unanimously admitted; likewise that this influence is often morbid; and we have shown that the reproductive organs may react on the brain by the medium of its ganglionic nerves, and in virtue of a force derived from that nervous system.

This influence varies, being made up of symptoms opposed in their nature, or only analogous. The difference of cerebral symptoms may depend either upon a variable intensity of the ovarian nisus, or upon the reaction of the same on different portions of the brain. But although these cerebral symptoms are various and distinct, they are all confounded under the common traditional name of hysteria. Neither are we the first to deplore that this should be the case, for Dr. Holland has observed that the difficulty of getting a correct nomenclature for morbid sensations applies particularly to the head.

Following Bacon's precept, and beginning our structure at its lowest foundation, we have carefully analysed the influence of the ovarian nisus on the brain, and we have found it susceptible of the following classification:

a. Pain in the head.
b. Sick-headache.
c. Pseudo-narcotism.
d. Hysteria.
e. Epilepsy.
f. Insanity.

The following table gives an idea of the per centage of the principal cerebral symptoms of menstruation experienced by dispensary patients, when free from all other morbid influences; but it must be borne in mind that as the patients belong to the lower class of society, it will afford no criterion of the frequency of hysteria at different times of life in women of the highly civilised classes.

TABLE V.

SYNOPTIC TABLE OF THE CEREBRAL SYMPTOMS OF MENSTRUATION.

Cerebral Symptoms of Menstruation.	During its Prodroma.	During its Regular Establishment.	At its Cessation.	Influence of Connexion on the Cerebral Symptoms.	Influence of Parturition on the Cerebral Symptoms.	Influence of Cessation on the Cerebral Symptoms.
	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)
Headache	30	41	45	Increased 9	28	Increased . . . . 23 Decreased . . . 10 Same . . . . 12 None 55
Sick-headache . .	9	7	12	Decreased 10	1	Increased . . . . 3 Decreased . . . 6 Same . . . . 3 None 88
Pseudo-narcotism	55	40	64	Same. 0	18	Increased . . . . 36 Decreased . . . 10 Same . . . . 18 None 36
Hysteria	$1\frac{1}{2}$	5	10	None. 81	53	Increased . . . . 7 Decreased . . . 0 Same . . . . 3 None 90
Absence of Cerebral Symptoms	34	30	15			

N.B. The addition of the numbers in each of the three first columns will amount to more than a 100, as many women, being affected with more than one symptom, find places under the respective symptoms.

a. Pain in the Head.

We mean to imply by this term simple pain unattended by any cerebral phenomena, hereafter to be described; for to repeated inquiries the patient gives but one answer—"Pain." Hippocrates—*Prædict.*, 2, 39—had already observed that towards the approach of menstruation virgins were particularly subject to pain in the head.

With regard to its seat, it may be met with in the following order of frequency, viz.:—In the temples and the forehead; at the top of the head, and at the occiput. The last-named places have been noticed by Friend, Etmuller, and others as its habitual seat; but we have rarely met with it in the occiput, though, if Gall's localisation of the faculties were correct, that should be its most frequent seat. With regard to its nature, it is described as a shooting, a throbbing, a gnawing, a burning pain, or as if the head were in a vice. It varies in intensity from that slight amount which merely inconveniences to that agonising pain sufficient to prostrate a hard-working woman, and make her lay by for a few days.

Its frequency as a prodromic symptom is represented by 30 per cent.
As a symptom of fully-established menstruation . 41 per cent.
And at its cessation . . . . . 45 per cent.

B. de Boismont mentions, in general terms, that out of 334 women 168 suffered from headache and twenty-four from giddiness.

Notwithstanding our own statistics, we believe this headache to be most frequent at puberty and before cessation. It is sometimes accompanied by noises in the ears, or temporary deafness; more frequently by a failure of vision. This is very seldom permanent, but precedes first menstruation, or each recurring epoch. The eyes show no visible change of condition, but the eyeballs feel sore—the retina feels the light too acutely. We have seen several needlewomen and governesses incapacitated by this symptom; and B. de Boismont mentions the case of a girl who was blind every morning for six weeks until the menstrual flow came for the first time.

This form of headache may depend on plethora; for a similar headache is observed in men, alternating with an hemorrhoidal discharge. It is, therefore, not to be entirely ascribed to ovarian influence. This headache has, however, been often found to persist some days after abundant menstruation. It is a frequent accompaniment of a painful or deficient menstrual flow, of amenorrhœa, or of ovarian and uterine disease.

This symptom does not certainly occur in man as the result of the influence of the genital apparatus on the cerebro-spinal system.

THERAPEUTICAL INDICATIONS OF SIMPLE HEADACHE.

1. To cure uterine or ovarian disease, if any exist.
2. To regularise the menstrual flow by stimulants, pediluvia, hip baths, and purgatives, a few days before the menstrual flow be due.
3. To supply the absence of an habitual drain by purgatives, when menstruation is either deficient or absent.
4. To bathe the temples with cold water, or vinegar and water, or,

better still, with Raspail's sedative lotion, of which the following is the formula:

Aromatic Spirits of ammonia	. . .	2 oz.
Camphorated spirits of wine	. . .	3 drms.
Common salt	. . . .	2 oz.
Water	. . . .	2 lb.

The salt is to be dissolved in the water, filtered, and the solution mixed with the other ingredients, which should be previously added one to the other, and the lotion should be kept in an air-tight bottle.

This lotion may be applied with a small sponge, or a pad of soft linen may be soaked in it, and applied to the painful part of the head, and renewed as often as may be required. If the lotion irritates the skin too much, water may be added. This is an invaluable application in all the cerebral affections of menstruation.

b. Sick-headache.

This is another term which requires but little comment. The patients will admit of no other explanation of their feelings, and they are unconnected with the coated tongue and other signs which would warrant their being considered as symptoms of gastric disorders. The sickness of such headache varies in intensity from slight and constant nausea to downright vomiting, which is of less frequent occurrence. The frequency of cerebral sickness as a prodromic sign, is 9 per cent.
As a symptom of fully-established menstruation . 7 per cent.
And at its cessation . . . . . . 12 per cent.

We know not whether sick-headache in man has ever been traced to the influence of the genital apparatus; but nausea and vomiting is often produced by a blow on the testicle; vomiting is evidently often induced by ovarian influences; for, independently of those cases we have met with, wherein vomiting was constantly the principal symptom of menstruation, we may remark that it may be produced by connexion, by conception, by pregnancy, and is not an uncommon symptom of amenorrhœa, ovaritis, and the first period of ovarian dropsy.

THERAPEUTICAL INDICATIONS OF SICK-HEADACHE.

1. The same as for headache, page 75.
2. The internal and external trial of the sedatives already recommended, and those which will now be described.

c. Pseudo-narcotism.

We find a distinct group of cerebral symptoms caused by the ovarian nisus, which are similar to those produced by narcotic poisons on the brain, and we apply to this group of symptoms the term, Pseudo-narcotism, because, without prejudicing the question, it graphically expresses the fact. Those who have had much practice in the diseases of women will remember, that previous to puberty, and during the suppression of menstruation, or the dodging time, the patients complain of "a dimness of eyes," of "a heaviness in the head," "a stupid feeling," "a lump in the head," a senselessness," of "a stupid

headache," of "feeling heavy for sleep, but without pain," of "the possibility of sleeping anywhere," of "an unconquerable sleepiness, amounting sometimes to stupor!" Thus, Emma N. could not sit down a moment without sleeping. These sensations sometimes coincide with a sense "of forgetfulness," "of feeling lost and bewildered," "of a temporary loss of wits," "of the fear of going mad." We recal the sense, although we mar the force, of the expressions by which women prove that the ovario-uterine organs have a specific influence on the cerebro-spinal system. It is so true that the peculiar state we have described resembles the influence of narcotic poisons on the brain, that when women of an advanced age experience flushes, and have an uncertain gait, or drunken eye, they are frequently, although in most cases erroneously, accused of being fond of drinking—the best proof of the aptness of the term proposed. Slight shades of the peculiar state indicated by these expressions, are the most frequent symptoms of menstruation, and when intense, they often constitute the principal peculiarity of disturbed menstruation at puberty and at cessation. Girls previously lively and clever, become stupid, and when sent on a message frequently forget what they were sent for, or how to come back; when at home, they will frequently let things fall out of their hands, and if they stoop to pick them up, they often fall down themselves. Suppression of the menstrual flow is a frequent cause of pseudo-narcotism. Its intensity varies according to the temperament of the female, and the energy of disturbing causes, and should they suddenly act with extreme energy, the result may be a state of coma, of nervous apoplexy, ending in death.

N. G. could almost sleep while walking at the menstrual periods, and once remained sixteen hours in a state of stupor, from which she woke quite well.

K. R., at the menstrual periods, would remain for hours in what she called her "quiet fit;" a state of self-absorption and total inactivity of the menstrual functions, unaccompanied by hysterical phenomena, or by convulsions.

At cessation, the loss of memory is sometimes a most distressing symptom. Patients forget where they have put things they are in the habit of using, keys, &c.

The frequency of pseudo-narcotism as a prodromic symptom, is . . . . 45 per cent.
As a symptom of fully-established menstruation . . 40 per cent.
And at its cessation . . . . 64 per cent.

Such are the gradations of pseudo-narcotism. While its minor cases have escaped observation, many have noted its existence in extreme instances. Thus Brierre de Boismont relates that for a whole year previous to menstruation, a patient of his would sometimes be plunged in a state of abstraction, and remain immovable, with eyes fixed on vacancy, and that when her senses returned, she would take up the thread of the discourse where it had been broken off by her attack. The symptoms disappeared of themselves when the menstrual flow became regular.

The same author mentions the case of a girl, who, for the three or four months previous to the first appearance of the menstrual flow,

became idiotic, but resumed her intelligence after menstruating. The same symptom—*stupidity*—is sometimes carried to an extreme height in chlorosis. Dr. Sandras, of Paris, has very justly insisted on this point, and given instances of its occurrence in both married and unmarried chlorotics.

Pseudo-narcotism is often very intense when the menstrual flow is either very painful, deficient, or completely absent. We have known, in a girl of twenty-one, intense pseudo-narcotism, resulting from amenorrhœa, mistaken for an idiopathic affection of the head. Her hair was shaved off, and she was bled and salivated, to the ruin of her constitution.

Dr. Villartay de Vitré has made known—*Union Medicale,* Tom. v., No. 40—a curious case of lethargy occurring regularly every month in a girl suffering from amenorrhœa, the attack lasting seventy-three hours. When the menstrual flow was re-established, the lethargic state disappeared.

With respect to the period at which these symptoms occur, we have been surprised at finding them sometimes appear very early, and unexplained by other causes. Thus we have found them in girls of eight or nine years of age, though first menstruation may be delayed to fourteen or fifteen; and in this we are confirmed by Landouzy, the author of the best work on hysteria, who says that he also has sometimes observed symptoms indicating the influence of the generative organs upon the nervous system long before first menstruation, and even before the little girls had *any idea* of sexual subjects.

As regards the intensity of pseudo-narcotism at the cessation or menstruation, we are borne out by other observers. Thus Tissot says: "I have seen one of the most reasonable and witty women I ever knew pass two years of her life at the cessation of menstruation in a constant dream of a calm and gay character like her own habitual disposition. She was at the same time so troubled with the fidgets, that she could only remain sitting for ten minutes at a time. If she persisted in doing so longer her sufferings were intense. Her nights were often sleepless, and remaining in bed was painful to her."

Dr. Teissier, of Paris, a physician whose character as an observer is well established, has published—*Gazette Med. de Paris*, Jan. 11, 1851—under the name of *Periodical nervous apoplexy*, a case which we consider to corroborate our views, as it shows intense pseudo-narcotism associated with temporary paralysis.

Case 19.—A lady, sixty years of age, since the change of life, has every month, and at the period she had been accustomed to menstruate, been subject to the following attack. She becomes unconscious, and on recovering her senses one half of her body is paralysed, and her speech is affected. These symptoms continue for several days, and gradually disappear, to return at the next monthly period. Being naturally of a calm and tranquil disposition, those about her know when the attacks are coming on by the agitation and restlessness she evinces, and they are never deceived as to the result of this sign.

In some women a high degree of pseudo-narcotism is the immediate consequence of connexion. This was always the case in a

patient of ours during the first year of marriage. Sometimes she would recover from it in half an hour or an hour, sometimes the morbid, would merge into the natural sleep, being followed by headache and prostration of strength during the following day.

During pregnancy the milder forms of pseudo-narcotism are frequent. The heaviness of head, the dulness of intellect, the giddiness, the tendency to fall, which are often erroneously considered symptoms of plethora, and used formerly to be treated by venesection.

S. C. always knew herself to be pregnant by feeling heavy in the head, giddy, and by very sleepy sensations, which increased as she increased in size. In P. N. there was no pseudo-narcotism at the menstrual epochs, but much during pregnancy.

With respect to the more intense amount of pseudo-narcotism, Mr. A. Hunter—*Annals of Medicine*, 1799—Mr. Blake, and Dr. Montgomery—p. 151—have cited cases where pregnancy was accompanied by very great drowsiness; and in Dr. Montgomery's case the patient's memory during the whole time of her pregnancy was a perfect void. Dr. Reid relates an interesting case of a woman, who, after she had been married nine years, when pregnant of her last child menstruated regularly until she quickened. This woman was always able to judge pretty correctly of the time of conception by a peculiar sensation of drowsiness, attended by sickness, by which she was then affected.

The milder forms of pseudo-narcotism are amongst the symptoms of over-lactation.

Baudeloque mentions the fact of women about to be taken with fits of eclampsia being thought drunk by the unexperienced; and although this disease may appear without prodroma, still heats and flushes, giddiness and bewilderment, are often its precursory symptoms.

Such are the facts which have led us to introduce the term *pseudo-narcotism* to express a state of the nervous functions which has been only partially alluded to by those who have written on hysteria and cephalalgia, and which will never be duly appreciated until, distinguished by a *name*, it receives a local habitation amongst recorded facts, for we ask what have the phenomena described to do with hysteria?

There are some who have the pretension of being practical men, and who eschew theory altogether, as if both were not indispensable. Those who assume the credit of being only *practical men*, should remember that they affect what is impossible, and that if they will not think for themselves they must borrow from bygone theorists, a staff to lean on, a thread to guide them. We have given the facts relating to pseudo-narcotism, we must now seek to interpret them, or, in other words, we must theorise, for theory itself may prevent chlorotic or pregnant women being injudiciously bled for symptoms similar to some of those of plethora.

Pseudo-narcotism may be interpreted by—

I. Cerebral disease.

II. Plethora.

III. Anæmia.
IV. Biliary derangement.
V. Toxamic effects of retained menstrual secretion.
VI. Ovarian influence over the nervous system.

I. Cerebral Disease.—If we were told that we have merely observed some obscure cerebral disorders depending on slight irritation of the brain, or its membranes, and which become more frequent at an advanced age in both sexes, we should answer, that pseudo-narcotism occurs more often without, than with signs of cerebral congestion, such as injections of the eyes and face, that it occurs independently of hemiphlegia, that in cases of well-marked cerebral disease we have noticed no corresponding increase of pseudo-narcotism, and that in several cases of long continued epilepsy it was totally absent. If we had merely described idiopathic cerebral disease common to both sexes, it would be continuous, and would not adopt the periodicities of the menstrual function ;—besides, we think it right to give some credence to the evidence of women themselves, when at cessation they of their own accord describe their cerebral sufferings as similar to those they experienced when the menstrual flow was stopped, or to those they were afflicted with previous to its first appearance. Is it not, therefore, fair to infer that pseudo-narcotism is caused by the ovarian nisus, although it may sometimes arise spontaneously in men? as in the following case:

Case 20.—Charles Ince, a printer, aged twenty-six, applied for relief at the Farringdon General Dispensary, March 4, 1850. He was tall and thin, he stuttered and squinted, but was of a healthy family, and had enjoyed good health until seven months back. He was taken with pains in the head, not acute, but heavy pains, with vertigo and excessive drowsiness sometimes in the morning, but mostly after meals, and in the evening. Being a pressman, and therefore exercising his muscles more than his brain, his work rather relieved his head than otherwise. This lasted for two months, when he was taken with epistaxis whenever he touched his nose. At St. Bartholomew's they gave some mixture, which, or the epistaxis, relieved him; for the last four months, since the epistaxis left him, he has been worse, and never free from drowsiness and forgetfulness. He is a married man, well off, and regular in his habits, he never drinks, but feels in the morning as if he had drunk. He has no tendency to hysteria, no tears, no alarms, no fits, the digestive organs were in a good state, and the sleep sound.

We prescribed the same treatment as for women who present the same symptoms, and he was well in a month, but a year after he had a slight return of similar symptoms.

II. Plethora. — The symptoms described as pseudo-narcotism have many points of similitude with those of plethora and cerebral congestion, which were often so interpreted, and are even now sometimes, particularly when palpitation co-exists. Such symptoms, whether occurring in chlorosis, or in pregnancy, have been often treated by bleeding, but with what sad effects, may be gathered from its fatal effects in two cases related by Dr. Dusourd. The fact of

the symptoms of pseudo-narcotism being often strongest when the pulse is weakest, shows that it does not depend upon plethora.

III. Anæmia.—It has been shown by Drs. Gooch and Marshall Hall that drowsiness often accompanies a deficiency of blood in the brain of little children, and this, as well as convulsions, is known to follow too copious bleeding or floodings. It must be remembered, however, that the skull being incompressible, must be filled with something, and that when too much blood is withdrawn from the system, the brain must then be permeated by blood containing too much serum, and to this we may ascribe the nervous symptoms already alluded to. When pseudo-narcotism occurs as a symptom of chlorosis, or of profuse menstruation, it may be explained in the same way as the nervous accidents after flooding or copious bleeding—by the brain being stimulated by imperfect blood. Very frequently, however, pseudo-narcotism is observed when the tissues present every appearance of health, and when the fluids in circulation seem in exact proportion to the wants of the system. The nervous phenomena cannot therefore be explained by anæmia.

IV. Biliary Derangement.—It has been shown that biliary congestion may give rise to drowsiness, to coma in some rare instances, and even to other symptoms usually called apoplectic; but though, doubtless, pseudo-narcotism is increased by disordered digestion, yet as it persists, after the biliary functions have been set right, and generally coincides with their healthy performance, it cannot be explained by biliary disturbance alone.

V. Toxæmic Effects of Retained Menstruation on the Nervous System.—Struck by the fearful consequences of suddenly suppressed menstruation, producing in some cases delirium, cerebral congestion, and death, many observers, and lately Drs. Todd and Cormack, have sought to explain these effects by the toxæmic effects of the retained menstruation on the nervous system, but similar symptoms, and all the less degrees of pseudo-narcotism, are most frequent in the female before first menstruation and after its cessation, and as in the girl before puberty, so in the woman who has passed the climacteric, there can be no menstrual secretion to be reabsorbed, the explanation, therefore, cannot stand.

VI. Pseudo-narcotism is an effect of the ovarian nisus on the ganglionic system, and thereby on the brain, and it neither arises from plethora nor anæmia; it is a nervous phenomenon, analogous to those described as ganglionic symptoms in our last chapter, and it is through the instrumentality of the ganglionic nervous system that the brain thus shows its perception of too strong a stimulus of the ovarian nisus. That pseudo-narcotism is a phenomenon evidently nervous, is confirmed by the fact of its being more amenable to narcotic, than to any other remedies, and the frequent coincidence and interdependance of the ganglionic epigastric sensations with pseudo-narcotism is a fact that must not be lost sight of by those who may hereafter follow us in this inquiry.

Before explaining the therapeutical indications of this state, we wish to remark, that if we have satisfactorily shown the frequency of

sleep as a symptom of all the phases of the generative function, or in other words, that sleep is produced by the morbid action of the ganglionic system of nerves on the brain, is it not fair to ask, "has the ganglionic nervous system nothing to do with the production of our daily sleep?"

Without affirming that sleep is a function of the ganglionic nervous system, we think ourselves entitled to deduce, from the facts contained in this chapter, that all theory of sleep is false which does not take into consideration the influence of the ganglionic nervous system in its production.

THERAPEUTICAL INDICATIONS OF PSEUDO-NARCOTISM.

1. To cure sexual disease and regulate the menstrual function.
2. To give sedatives internally.

One might fancy that narcotic remedies would increase pseudo-narcotism, but the contrary is a fact of daily occurrence. In the milder forms of catamenial headache and pseudo-narcotism they alone suffice to cure, and always assist the action of bleeding, of purgatives, and of other remedies which may be deemed necessary.

To relieve the cerebral symptoms, which, though cured, so frequently return, we very seldom make use of opium internally, but we give hyoscyamus, the mild action of which permits its being taken longer without producing cerebral disturbance or constipation. We order a mixture composed of a solution of potash and tincture of cardamoms, of each four drachms, with six drachms of the tincture of hyoscyamus, in six ounces of camphor mixture; a tablespoonful to be taken with a little water ten minutes before every meal, and on going to bed. The proportions of the ingredients may be varied according to circumstances, and that it does good is proved by the fact, that at the public institutions to which we are attached, we are very frequently applied to by our patients for "some more of the same stuff which did them so much good before." Hyoscyamus is an invaluable remedy in the treatment of diseases of women, whether given according to the preceding formula, or as an extract in pills, or as a topic in plasters. No sedative has so soothing, so harmless an action on the nervous system of women.

The extract of conium has been likewise much resorted to at various epochs of medical practice; and, when properly prepared, it is also very useful given in pills, alone or combined with the blue pill.

The extract of belladonna is very valuable, for external use, in ointments or plasters.

Dr. Physick used to say that "camphor was made for women, with whom it always agrees, while it always disagrees with men." This is somewhat an exaggeration, for we have met with women with whom it disagreed, and it often agrees with men who have an effeminate constitution. We generally prescribe the ordinary camphor mixture as a vehicle for other remedies; but where expense is no object, Sir James Murray's fluid camphor is a good preparation.

It is related in an article on the burning of widows—*Quarterly Review*, Sept., 1851—that "the messenger found the Brahmin plying

her with camphor, and that he was wholly unable to overcome the exultation which she exhibited." The fact is curious, proving the knowledge of some of the properties of this drug by a people, now, in many points, as they were found by Alexander.

3. To apply sedatives locally. Belladonna, or other narcotic plasters to the ganglionic nervous centre; and to the head, Raspail's camphorated sedative lotion, cold or tepid, whichever the patient may prefer. For cases of stupor resulting from suppression of the menstrual flow, while the patient was unconscious, we have, in addition to other means, rubbed into the scalp Eau de Cologne with as much camphor as it would dissolve. After rubbing it in for a few minutes the patient has come to herself. In a case in which these attacks of stupor frequently followed the epigastric pain, this was our only treatment during the attack. On recovering her senses the patient felt as if her brain were " benumbed," and to this succeeded a sensation of internal pricking, like pins and needles. When this was complained of we wrapped the head in a turban of flannel, and left the patient to repose.

4. To be careful with regard to prescribing venesection to chlorotic women, or to those who suffer from suppressed menstruation or from cessation; for such patients generally only offer a slight resemblance to plethora, and venesection entails a state resembling chlorosis, or confirms it if it is already produced. Should real plethora cause amenorrhœa, and increase pseudo-narcotism, bleeding from the arm or leg may set all right, but we prefer taking the blood from one of the lower limbs.

Bleeding during pregnancy should be avoided, unless pseudo-narcotism be accompanied by a hard and full pulse, or by the symptoms graphically described by Dr. Meigs:

" If your patient, in an advanced state of pregnancy, wake in the morning with her face bloated, her hands and wrists so swollen that she can with difficulty flex or extend the fingers, and this accompanied with pricking sensations affecting the arm as though the member had been asleep, with sickness, pain in the head, or vertigo, you would at once refer such phenomena to their true cause, which is the polygæmic state of the upper part of the trunk and limbs. In the progress of the day, as she sits up and moves about on her feet, the polygæmia ceases, to return upon taking the horizontal posture, and to manifest itself again on the following morning, and so on from day to day. Such a woman ought to be *bled*, because if this hyperæmic condition be allowed to be renewed from day to day for weeks in succession, the vessels of the brain will become habitually surcharged, exposing her to no little risk of apoplexy during her pregnancy, and greatly aggravating her liability to eclampsia when to an habitual hyperæmia she comes to superadd the dangerous congestion which coincides with a first, hard, long, laborious labour."

The therapeutical indications of pseudo-narcotism carried to the highest point of menstrual coma are similar to those of hysterical delirium and apoplexy, and may be deferred until these come under notice.

d. HYSTERIA.

We have seen how many phenomena are erroneously called hysterical, and we propose that the term should only be employed to mean a state of ill health comprising some of the following symptoms:

1. Uneasy sensations in the abdomen, at the epigastric region, and in the throat; uncalled-for lowness of spirits; involuntary tears, or uncalled-for high spirits and laughter; with or without change in the moral character. This we shall call *Hysteria*, or the *hysteric* diathesis.

2. When, in addition to some of these hysterical symptoms, there are fits characterised by the partial loss of cerebral power, and with convulsive action, we shall speak of them as *Hysterical fits.*

3. When, in addition to other hysterical symptoms, there is a partial or a complete loss of cerebral power, unexplained by cerebral hemorrhage, we call it *Hysterical apoplexy.* But we look upon the three forms as the phenomena of *one* disease presenting infinite gradations, which we divide into three for convenience of speech.

The influence of the sexual system of woman in the production of hysteria is a medical dogma which has been unimpaired by time. First promulgated by Hippocrates and Galen, it received fresh confirmation from De Graaff and Drelincourt, was admitted by Morgagni and Bonet, and has lately been established incontrovertibly by Landouzy in his prize essay on hysteria.

This does not at all preclude the existence of hysteria in man. Why should it not be produced in man by the undue action of the genital apparatus on a predisposed nervous system? This is, however, much less common than is supposed. In thirty reported cases Landouzy only found four related by F. Hoffman, Breschet, Mahot, and Aligre, which could bear examination, and in these there was no abundant limpid urine after the attack, no tears without motive, no pandiculations, nor that nervous susceptibility which, between the attacks, constitutes the groundwork of hysteria. We therefore do not apologise for introducing the following case:

CASE 21.—A gentleman, aged thirty, of a sanguine complexion, middling stature and size, with a well-formed head, and with prominent eyes, a tutor, very clever at languages, but shy, bashful, deficient in the art of turning his talents to good account, still not failing in courage, for considering himself aggrieved by the father of one of his pupils, he brought him into court. About two years ago, without any known cause, while giving a lesson of mathematics, he experienced strange sensations in his head, and became insensible. He remained so for a few minutes, and, by external and internal stimulants, came to himself. While insensible there were no convulsions, no frothing at the mouth, but this state was followed by headache and languor. He had a similar attack a few days after, but none since. In the month of April, 1852, after much preliminary talk, Mr. F. explained, that although his bodily health was excellent, and his pecuniary position comfortable, he had of late been subject to lowness of spirits, for which he could discern no cause.

He had also been annoyed by a sensation of something strangling him, and asked us to look at his throat, which presented nothing peculiar. He said that these symptoms became worse at night, and were greatly, if not completely, relieved by a copious flow of tears. Hysteria in man being so uncommon, we questioned him respecting the state of the reproductive function, and he said that, though he often felt a desire for sexual intercourse, he never indulged it, from a sense of duty and religious motives. We ordered a sedative mixture, but it had no effect, for he was worse a few days after.

May 6th he called again. His bodily health was excellent, appetite good, bowels regular, urine as usual; his strength greater than usual, he could walk for miles without fatigue; his intellectual faculties were clear; he gave his lessons without any mental strain, but when he had done, if he returned home to read as usual, he could not continue doing so for more than an hour. The lowness of spirits came over him, and tears ran from his eyes "like water from an overflowing cup." For the last few days his dread of returning home had been so great, that he wandered about the streets or in the fields until midnight, and then often returned to spend sleepless nights, or to be buried in a dead heavy sleep peculiar to many cerebral affections. There were no other therapeutical indications, so we merely ordered a pill, containing a quarter of a grain of extract of opium, one grain of extract of hyoscyamus, and two grains of aloes, to be taken every night. This did no good; the mental depression was increased, particularly by fine weather, and by the sight of people moving gaily about.

June 4th.—After much trouble we extracted from the patient that the cause of his suffering was that he had formed an attachment for a lady who lived in the same house as himself, and whose hand he despaired of obtaining. We advised the patient to remove to another part of town, and in time he recovered, though still remaining nervous and singular as before.

Thus, though man may have general good health, yet, if he have a peculiar nervous system, and this system be influenced by the sexual organs, excited by strong desires, and restrained by duty, hysteria may appear, as in this case, as in that related by Frederick Hoffman, and as in that of thousands of women. Dr. J. Conolly has mentioned having not unfrequently witnessed symptoms somewhat similar to those detailed in Case 21 in men previous to marriage.

1. Hysteria.—The influence of the generative apparatus on the nervous system is distinctly perceivable in many of the lower animals.

In the beginning of spring, just before the period of copulation, the nervous system of frogs is endowed with a most remarkable degree of irritability. The slightest touch will then produce those states of the nervous system which, at other times, can only be produced by narcotic poisons, or by energetic galvanic action. It is a matter of daily observation, that when women are subjected to increased ovarian action, they are also more irritable, more impressible to cold, to noise, and other physical agents.

"Sensation is my calamity, not pain," was the eloquent expression of a poor woman at the change of life. Frequently then, but sometimes also at each menstrual period, are women unnerved by the most trivial circumstances. It is perfect torture to some to hear the sound of conversation, and the moral character alters to what is called temper. We believe that this, and all the phenomena of hysteria included in our definition, are the consequence of undue action of the reproductive organs on the cerebral system, and we refer those who may entertain any doubts on the subject to Dr. Landouzy's work, in which he confirms the general opinion by a careful analysis of 350 cases.

As we have already abundantly proved that the ovaria are the governing organs of the reproductive apparatus, it is not surprising to find that hysteria is frequent at puberty, and particularly when menstruation cannot be regularly established. We find, accordingly, that 105 out of Landouzy's 351 cases occurred at the ages of from fifteen to twenty. Besides the symptoms alluded to, there is particularly then an estrangement of character, which varies from a peevish, snappish, fretful disposition to that utter impossibility of self-control which would almost warrant constraint. Duchamp and others have seen insanity show itself at this age, and last two or three months.

The frequency of hysterical phenomena as a prodromic sign in women of the lower class is . .	$1\frac{1}{2}$ per cent.
As a symptom of fully established menstruation .	5 ,,
And at its cessation	10 ,,

The smallness of this proportion as compared to that of pseudo-narcotism shows the intrinsic nature of woman's constitution, and that in those whose frame is hardened by labour and exertion the ovario-uterine organs rarely induce hysteria. For them to produce hysteria the nervous system of woman must be wrought up to an artificial state by luxurious living, by overworking the mental faculties, and still more by the imprudent over-development of emotions.

Thus hysteria is frequent at puberty whenever the patient has been debilitated by perverse education and premature menstruation. Later in life, when the generative organs become fully developed, if, on the one hand, the accomplishment of their function be denied, while, on the other, they are excited to action by indolence, good living, and the incentives of civilised society, then will more serious attacks of hysteria take place, particularly if the menstrual function be irregularly performed. This is proved by the experience of Parent Duchatelet, who says that prostitutes, while following their deplorable life, are seldom —8 in 105—subject to hysteria; while, on the contrary, when they enter the Magdalene institution they are generally troubled with hysterical symptoms, or with sensations of suffocation at the epigastric centre, with cerebral congestion and a disturbance of the intellect, which requires an appropriate regimen. The milder manifestations of hysteria are very frequent during the "*dodging time*," and for some time after cessation. B. de Boismont has noted the more frequent

occurrence of hysterical nymphomania at that, than at any other time.

2. Hysterical fits rarely occur at first or last menstruation. They are sometimes caused by the deficiency or the absence of the flow, or by the amount of concomitant pain, and are frequently the immediate consequence of suppressed menstruation.

We have said that in some women connexion produces pseudo-narcotism, in others it is followed by hysterical fits, even with those who, as virgins, had not so suffered. They also occur to women during pregnancy, and at parturition, if the convulsions of eclampsia can be considered as hysterical fits, modified by the conditions of pregnancy. Champier, Baudeloque, and Velpeau have observed that when eclampsia occurred during the last months of pregnancy, the convulsive fits came on at what would have been the menstrual epoch.

Hysterical fits are sometimes the consequence of ovarian or of uterine diseases, and can only be cured by curing them, while at the same time cauterisation of the neck of the womb may immediately determine hysterical convulsions in highly nervous subjects.

3. Hysterical apoplexy, hysteria, and hysterical fits, may be met with not only at the menstrual epochs, but also during the whole period of ovarian activity, and some time before or some time after the last menstruation. The strongest hysterical effects or hysterical apoplexy is, however, only met with during the most active portion of reproductive life, and during the monthly crisis of ovarian activity. Thus the sudden suppression of menstruation, when the sexual organ is in the highest state of power, and the nervous system similarly excited, sometimes gives rise to a sudden shock, the brain is struck as if by lightning, the patient is plunged into a state of apoplectic coma, and when a *post-mortem* examination is made, there is found a congestion of the cerebral vascular system. Hysterical apoplexy requires illustration. A striking case is that given by Mr. Whitehead—*Lond. Med. Gaz.*, April 2, 1847:

Case 22.—A young woman in respectable circumstances, nineteen years of age, had menstruated regularly since the age of sixteen. On the day when, according to her own calculation, menstruation should have commenced, death deprived her of an affectionate friend and guardian; she had experienced the usual premonitory symptoms, but the menses did not appear. This failure was attributed to the fatigue and anxiety which she had endured for several days previously. Two days afterwards, during an angry altercation relative to deceased's property, the menses being still absent, she was seized with palpitations and syncope; from which, however, she soon recovered. Thirty hours later, having suffered severely in the interval from headache and languor, she was seized with violent hysterical convulsions, accompanied with a sense of choking. This first attack was said to have lasted several minutes, and to have left her extremely languid, but sensible. After a short interval the convulsions returned with increased severity, and con-

tinued to recur in quick succession. In a few hours the patient was found to be totally insensible.

The doctor first saw her nine hours after the seizure; the features were tranquil, and of a leaden paleness; the eye was closed, and free from vascular turgescence, the pupil widely dilated; the teeth were firmly clenched, and the tongue protruded partially between them; the breathing was noisy, but not hurried or stertorous; the pulse, beating seventy-two in the minute, was full, but not free. Whilst prosecuting the inquiries, a violent paroxysm of tetanic convulsions came on, implicating, principally, the muscles of the abdomen, and, less powerfully, those of the thighs, legs, and arms; but producing scarcely a perceptible change upon the expression of the face. The abdominal muscles in the supra-pubal region were gathered into the form of a circumscribed tumor, the size of a child's head, which became a little, though but very slightly, diminished by evacuation of the bladder with the catheter. This circumstance created a momentary suspicion of the existence of pregnancy, but examination per vaginam immediately cleared up the doubt; the os uteri being small and linear; its lips smooth and even; and the whole organ light, loose, and of the unimpregnated size. Moreover, the tumor in question, losing its circumscribed character as the spasm subsided, soon merged itself in a diffused fulness of the whole hypogastric region, in which state the parts remained during the rest of the quiescent interval. Notwithstanding bleeding and other active measures, her symptoms acquired more and more the apoplectic character; the pupil was insensible to light, and dilated to a mere ring; the breathing became more laboured and stertorous, and the mouth frothy. The convulsions ceased about two hours before the moment of dissolution. She died twenty-four hours after the first convulsive seizure.

On a *post-mortem* examination the cerebral veins and sinusses were found distended by blood; the thoracic and abdominal organs were healthy. The os uteri was a third of an inch in length, and completely closed; the labia were of the ordinary dimensions, and free from congestion. The body of the uterus was turgid: its right half, both anteriorly and posteriorly, was deeply injected with blood, offering a striking contrast with the opposite half of the organ, which was pale; its mucous lining presented a beautiful arrangement of its vascular capillaries, which were finely injected with what would appear to be a slightly coloured serum, giving the most delicate rose tint that can possibly be conceived.

The whole plexus of vessels approaching the uterus and Fallopian tube, enclosed between the folds of the broad ligament, were, on the side corresponding to the turgid moiety of the uterus before noticed, distended with blood; the great mass of them were observed to take a course parallel to the Fallopian tube, but were connected together by innumerable cross and oblique branches, the whole forming a crimson band of network, about an inch and a quarter in width, extending between the ovary and the uterus. The Fallopian tube and fimbriated extremity on the same side were highly turgid, of a deep

crimson colour, and appeared as if consisting entirely of an aggregation of injected capillaries. On the left side the vascular turgescence was less considerable, being confined principally to the outer extremity of the Fallopian tube and the adjacent parts.

The ovarian bodies were greatly enlarged; both were covered with cicatrices, beneath some of which were remains of yellow bodies in different stages of decadence. The left presented, at its upper part, a Graafian vesicle, which appeared to have arrived at a state of development beyond what is generally considered maturity. It was elevated to at least five-sixths of its entire dimension above the surface of the ovary in which it was imbedded; and through its transparent walls the yellow germinal spot could be distinctly seen. Trunks of vessels of extreme minuteness, emerging from the surrounding stroma, mounted upwards upon the walls of this vesicle, subdividing into a multitude of smaller ramifications, some of which could be seen only by the aid of a powerful magnifier.

We will extract another case, from Dr. Tweedie's *System of Practical Medicine*, vol. iv.:

Case 23.—A young lady who had for some time been hysterical was attacked by peritonitis, from which she was not relieved by depletants; the pain subsided spontaneously, but soon after cerebral disorder arose. One day she exclaimed suddenly that flames were rushing to her brain, and fell down dead. On inspection, it was found that the cerebellum was pale; the cerebrum and its membranes slightly injected. The right side of the heart was completely gorged with blood. On the left side, however, not only was the ventricle quite empty, but spasmodically contracted; and this was looked on as the active cause of death. A rope of mucus hung from the os uteri. The Fallopian tubes were dark with black blood; several Graafian vesicles were ready to burst; the hymen was entire.

A similar case is mentioned by Dr. Bright; the source of irritation, however, was a calcareous deposit in the fimbriæ.

Dr. Rullier—*Dissertation inaugurale*—relates that a girl of fifteen died the second day after violent hysterical attacks, brought on by suppression of menstruation from fright. Engorgement of the vessels of the brain and slight inflammation of the ovaries were the only lesions found. This case is in many points similar to that of the Venetian woman, who died in the midst of hysterical convulsions, and was opened by Morgagni.—*Epis.* 45th.

The most recent case with which we are acquainted is one which was under Louis's care at the Hôtel Dieu of Paris.—*Gaz. Med. de Paris*, 1846. On opening the body no cerebral lesions were found to explain the hysterical attacks and hemiplegia; but the ovaries were subacutely inflamed, engorged, and lardaceous; the Fallopian tubes were acutely inflamed, and contained pus, of which there was a quart in the peritoneal cavity.

Many practitioners will class with these cases those of women dying in puerpural convulsions, although the phenomena are modified by the peculiar state of the nervous system and of the vital fluids during the puerpural epoch.

With respect to the explanation of hysterical symptoms, we remark that they cannot depend on a too abundant or a too scanty supply of blood, nor on any peculiar richness or poverty of its composition, for these accidents occur alike under every variety of state of the blood-vessels and of the blood. Dr. Todd and Dr. Cormack have revived the old opinion, which attributed hysterical delirium and convulsions to a toxæmic effect of retained menstrual blood on the brain; but we repeat, as hysterical symptoms are observed before first menstruation, they cannot then be attributed to a poisoning of the blood, besides, what necessity is there to attribute any poisonous qualities to the menstrual flow, since we are all acquainted with cases wherein the sudden suppression of an hemorrhoidal discharge gave rise to great constitutional disorders, or to pulmonary hemorrhage or apoplexy.

We believe that the nervous, and not the circulating system, is the medium by which the ovaries affect the brain, so that it may produce hysterical symptoms in exactly the same way as it produces pseudo-narcotism. What, however, was obscure in the mechanism of pseudo-narcotism is plainer in that of hysteria.

If the pathologists of all ages point to the reproductive organs as the starting-point of hysterical affections, they also, like the patient, draw attention to the pain or suffocation at the pit of the stomach, to the sensation of strangulation, after which comes the involuntary laughter or the tears, the convulsions, the coma.

Professor Schulzenberger, of Strasburg, has shown—*Gaz. Med. de Paris*, 1846—that it is sometimes possible, by mere pressure on the ovarian region, to cause the irradiation of pain from that focus to the epigastric region, and by continuing the pressure, to induce, first the globus hystericus, and soon afterwards hysterical convulsions, while pressure on any other part of the body produced no such effects. In a highly nervous hospital patient, pressure upon the ovarian region caused convulsions, without any intermediate symptoms, and this experiment was repeatedly tried by several professors of the faculty of Strasburg, as well as by the gentleman who records the case.

These are doubtless rare cases, but they remind the observer how frequently hysterical convulsions are preceded by pain or strange sensations in the hypogastric and ovarian regions, pains which produce the suffocating feelings felt at the pit of the stomach, and then the globus hystericus. Landouzy has shown that in the vast majority of cases the hysterical convulsions were thus ushered in.

Thus given to the predisposed nervous system a too powerful ovarian nisus, it will react on the *cerebrum abdominale* so as to multiply its peculiar nervous influence, which is sent to the brain with such headlong precipitation that woman, no longer the mistress of her own actions, is literally "fuddled with animal spirits, and made giddy with constitutional joy." When the ovarian nisus is further increased, or reacts on differently constituted nervous systems, after accumulating for a time, it breaks out at last, spending its energy in hysterical convulsions, and finally, if, when the ovarian nisus is at the highest, it is suddenly disturbed by intense mental emotion, the centrifugal nervous currents, directing the menstrual flow, are suddenly checked,

the whole energy of the menstrual nisus is thrown on the central ganglia of the ganglionic system, which reacts on the brain with such intensity, that in a few hours death ensues, and nothing is found to explain it but congestion of the cerebral blood-vessels.

This may be called hypothesis, but the medical practitioner has no other means of saving his patient in such a case than by acting as if he saw with his own eyes the nervous currents moving along the nervous cords as we have described them to do.

THERAPEUTICAL INDICATIONS OF THE THREE DEGREES OF HYSTERIA.

1. Therapeutical indications of *Hysteria*, or of the hysteric diathesis.

a. To ascertain first, whether it be determined by inflammatory or other affections of the ovaria or the womb, but to bear in mind that "the nervous and circulating systems, though so closely connected in every function of life, have yet their separate powers. Even taking the whole of each system, these powers are not always, it would seem, in exact relation to each other; and this is more particularly true where the vascular changes, whether of inflammation or of simple congestion, are limited in extent. We may need for relief the change in circulation which bleeding affords, yet may require at the same time that support or stimulus to the nervous power which is essential to the equal distribution of the blood, without which disorders of a new kind will supervene." What Dr. Holland has applied to diseases of old age, is particularly applicable to the treatment of all known diseases of women.

b. To regulate the menstrual function.

c. To strengthen the nervous system by a well-contrived plan of mental, moral, and physical hygiene. To enter into details would be to re-write what may be found in our "Elements of Health," and "Principles of Female Hygiene."

2. Therapeutical indications of *Hysterical attacks.*

a. To use cold water—that being always at hand—dashing it on the forehead and the epigastric region. A cold water injection often cuts short the attack, and Cruveiller says a draught of cold water is infallible, and to make the patient drink he recommends the jaws forcibly to be separated, and the water to be poured down from a bottle as a groom would do to a horse—a plan which, if employed by beginners in practice, would not tend to increase it.

b. To remember the old adage, "Sanguis frenat nervos," and not to be frightened into blood-letting, unless there be evident fulness and strength of pulse, and an energetic action of the heart. In strongly constituted women bleeding from the arm at intermenstrual periods, or from the leg if the menstrual epoch be at hand, may sometimes be resorted to, though a few leeches applied to the head will be generally found sufficient.

After the first violence of the attack is over, its return should be prevented by the exhibition of what we have recommended for pseudo-narcotism, likewise preparations of valerean, of asafœtida, and of opium, exhibiting the latter *per rectum*, in an injection of from twenty

to forty minims of the vini opii in a teacupful of milk and water, which may be repeated, if necessary, during the day. The camphor liniment, to each ounce of which is added one drachm of laudanum, may be with advantage gently rubbed into the skin of the hypogastric region, and of the inner part of the thighs.

c. To put in force the therapeutical indications of hysteria.

3. Therapeutical indications of *Hysterical apoplexy.*

a. If the action of the heart and pulse be sufficiently strong to warrant the loss of blood, to try and turn the nervous and sanguineous currents in the normal direction by bleeding from the saphena vein, or by applying from twelve to twenty leeches to the pudendum, and when these have been on half an hour, to take them off and stop the bleeding, in hopes that the blood-current set towards the leech-bites may be directed to the surface of the womb.

b. The patient being helpless, hip-baths are out of the question, but hot bottles may be put to the feet, and large mustard poultices to the legs and thighs. Stimulating enemata should also be given, containing one ounce of decoction of aloes, and one scruple of tincture of savine.

The hypogastric region and inner parts of the thighs may even be rubbed with a liniment containing tincture of savine and tincture of cantharides. It is a question of life or death, and nothing should be neglected which can be either suggested by experience or theory.

As soon as the patient can swallow, an additional attempt should be made to bring about or to increase the menstrual flow, by an emmenagogue potion; we have sometimes given the following with good effect:

Tinct. sabin. . . . . . . 50 minims.
Spir. ether. nitr. . . . . 5 drachms.
Aquæ destillat. . . . . . 5 ounces.

A tablespoonful to be given every hour.

It is useless to say that we do not in any way participate in the dread of tincture of savine generally entertained by the profession, and expressed by several medical men at a late trial. In *ordinary* cases of amenorrhœa, when the patient's strength had been recruited, we have often given ten drops of the tincture of savine twice or three times a day, without inconvenience, and sometimes with the desired results.

c. To relieve the pressure to the head when the face is flushed, and the vessels turgid, by applying six leeches behind each mastoid process, and the sedative camphorated lotion made stronger by adding two ounces instead of one of spirits of ammonia to the other ingredients.

Epilepsy and Catalepsy.—It has been judiciously suggested, that although extensive ulceration of the neck of the womb does not of itself produce hysterical or epileptoid phenomena, we may still believe that ovarian irritation may cause epilepsy, for slight causes sometimes produce strong reflex action; tickling the fauces causes sickness; and by merely pressing the hand on the neck of the womb, Dr. Ramsbotham in one patient brought on an attack of epilepsy.

The frequency of the occurrence of epilepsy from ovarian irritation has been exaggerated of late. Brierre de Boismont has seen

epileptic attacks occur in a girl every month for a whole year, but they ceased when menstruation was established. Dr. Beau—*Recherches Statistiques*—found that, out of 127 cases of hysteria and epilepsy, in thirty-five instances the origin of the disease coincided with menstruation.

Drs. Tyler Smith and Brierre de Boismont have each of them seen several cases wherein hysterical and epileptoid attacks only came on at first menstruation and at the decline of life, and at each menstrual period, the nervous symptoms completely disappeared on the cessation of the menstrual flow; while Dr. Thurnam has met with one or two epileptic fits occurring regularly at each menstrual epoch, when the flow was very scanty, and on menstruation ceasing the fits became more numerous, especially during one week of every month, and there was pain on pressure of the left iliac region. The patient improved, and under the influence of steel, menstruation re-appeared. Did space permit, we could relate several similar cases; we shall, however, briefly sketch the following:

CASE 24.—Esther G. came to the Paddington Dispensary June 21st, 1852. She is nineteen years of age, of middling height, spare habit of body, dark hair, grey eyes, sallow complexion, and looks nervous. She has six brothers and sisters in rude health; her mother is strong, and so is her father. Menstruation appeared at thirteen; was regular every three weeks; from the first was only accompanied by pseudo-narcotism; has never missed, but was always moderate in quantity, and less during the last two years. Since that period she has experienced a "funny feeling" in the right foot, and a slight pain and shaking in the calf and thigh of the same side. This often occurred, and lasted from five to ten minutes; but on two occasions the pain and shaking in the thigh was followed by trembling in the stomach, and by pain so severe in the epigastric region that she shrieked, fell, lost her senses, and bit her tongue. The fits did not occur at the monthly periods, and rubbing the foot has sometimes prevented the further progress of the nervous symptoms. The scantiness of the menstrual flow, and the debility of the patient, suggested that steel might afford relief; and it has done so, for instead of having the sensations in the foot every week, she has only had them once in six weeks, and the monthly flow has become more abundant.

Epileptic fits have been rarely met with as a consequence of connexion, of pregnancy, of parturition, or of uterine disease.

MECHANISM OF EPILEPSY.

The predisposing condition of the cerebro-spinal system is, of course, different from that of hysteria, but the mechanism of the two diseases is the same. The disease may arise without the generative system being at all implicated, but the *spina venifica* is to be sought in the ganglionic nervous system; and, however little we can understand the anomalous pains in some extremity of the body, there is frequently epigastric pain, or a sense of suffocation sufficient to show the influence of the *cerebrum abdominale* in the production of the disease.

THERAPEUTICAL INDICATIONS OF EPILEPSY.

1. To regularise the menstrual function.
2. To apply in other respects the treatment suggested in classic works.

Catalepsy.—With regard to this singular condition in its relations to the functions of the reproductive system, we know but little, because the disease itself is rare, and therefore few cases have been published during the last few years when ovarian and uterine diseases have been better known to the profession. In two cases, however, Dr. Pistocchi found ovaritis to coincide with catalepsy; it therefore behoves observers to note how far it may be the case.

Insanity.—We have already remarked how frequently temporary derangement of the moral and intellectual principle was produced by the seemingly healthy action, and by the morbid performance of the various phenomena of the reproductive function. Like other observers, we have seen numberless instances of *temporary* mental derangement caused by the excessive or deficient action of the reproductive system on the nervous system, but we now draw attention to permanent mental derangement.

B. de Boismont has, in four cases, seen the ovarian nisus so react on the brain at puberty as to cause madness. Two of the patients were affected with general delirium, and required strait jackets; in the other two delirium was partial. One of them was bent upon drowning herself.

Esquirol established that derangements of menstruation form one-sixth of the physical causes of insanity. Brierre de Boismont professes the same opinion, and says that the menstrual epochs are always "*un temps orageux*" even for those insane women who regularly menstruate. These authors, and many others, assert that the restoration of reason in such cases depends upon the regularisation of the menstrual function. Sometimes, however, the reappearance of menstruation and the restoration to reason are cœtaneous results of the hidden cause of the patients' improvement, producing at the same time a nervous as well as a sanguineous collapse. It is generally believed that, when women have ceased menstruating, they cease to be susceptible of nervous affections. This is not true, for during the "dodging time" they are extremely liable to the minor symptoms of hysteria, lowness of spirits, involuntary tears, peculiarities of temper, &c., which, when unattended to, not unfrequently merge into downright insanity.

It is sufficient to go round the wards of one of the large county lunatic asylums in the vicinity of London to become convinced of this; and Dr. Davey assures us that such cases permit of a greater proportion of cure when due care is paid to the pathology of that period. Both assertions are confirmed by B. de Boismont, who says, that in thirteen years he has met with twelve cases of insanity, evidently produced by cessation of menstruation, and that sometimes in ceasing to menstruate the insane are cured. If it would not

take too much space, we could adduce five instances of insanity appearing without any other cause than the change of life. Dr. Day admits that senile insanity is sometimes caused by a diseased condition of the ovaries.

Esquirol relates the case of a lady in whom mania appeared on the nuptial night; the second attack came on at the time she conceived. Dr. Belhomme relates that a lady had a first attack of mania, lasting twelve days, during pregnancy, in 1825
She became again pregnant, and was again afflicted with mania in 1826
She was pregnant and had a more obstinate attack in . . 1830
Another slight attack during another pregnancy in . . . 1835
Madness became permanent after suppression of menstruation, in 1836

This time the lady was not in the family-way, but complained of pains in the pelvis. Lisfranc found hypertrophy of the fundus uteri and erosions on the neck of the womb, and the amelioration of the mental disease coincided with that of the womb, which was obtained by leeches, injections, and repose.

Dr. Belhomme also cites the case related by Dr. Gaultier de Claubry, of a young lady who had a first attack of mental derangement during pregnancy, but who soon recovered after her confinement. Ten years after she had another attack, and it was also thought that she was in the family-way; but Baron Boyer discovered a uterine polypus, which was extracted, and the mental derangement soon subsided.

Esquirol and Dr. J. Conolly confirm the influence of uterine and ovarian diseases in the production of insanity; but of this hereafter.

MECHANISM OF INSANITY CAUSED BY THE OVARIAN NISUS.

Having passed in review the effects of the ovarian nisus on the cerebro-spinal system at successive periods of life, we must inquire how, in some women, it can be the main cause of madness. From the written experience of trustworthy observers, from the materials collected by ourselves, from the vivid recollection of many facts, we gather:

1. That between the haziness of intellect, the slight forgetfulness of pseudo-narcotism and idiotcy, there is no break; that every intervening degree is exhibited in some women at one of the phases of healthy or of morbid ovarian nisus.

2. That between the first slight estrangement of a girl's temper and the maniac's delirium there is no break; every intervening link being supplied by some women at one or other of the successive phases of healthy or of morbid ovarian nisus.

3. That between those first indications of uncontrollable muscular power called "the fidgets," and the strongest convulsions of hysterical apoplexy, there is no break, every intervening link being supplied by some women at one of the phases of healthy or of morbid ovarian nisus. When the same powerful influence produces permanent insanity, by what other mechanism can it act on the brain but by that of

hysteria? The ovarian nisus rouses the centre of the ganglionic system to increased energy, so that without any structural change in the brain its functions may be totally perverted by the too powerful action of the ganglionic nervous system. We are thus led to look on this nervous system as a source of vital power, infallible when confined within the limits of the vegetative functions over which it presides, constantly reacting, therefore, on the cerebro-spinal system as far as its nutrition is concerned, but interfering with the proper functions of the brain when its influence becomes too powerful or perverted. And as the nature of this ganglionic force is to be impulsive and uncontrollable, it casts reason off the rails, as Galen might have said of his lever of vital forces, if railways had been an invention of his age.

If this be true of those rare instances of insanity produced by undue action of the ovarian nisus, does it not lead to the conclusion that the cause of insanity in other cases should oftener be looked for in the ganglionic nervous system, than in the brain? Many of the habitual phenomena of insanity are referable to no other explanation.

If in many insane women the menstrual function is regularly performed, despite the wet, cold, and other counteracting influences, does not it show an increase in that ganglionic force on which the ovarian nisus depends? If the insane of both sexes are capable of a surprising endurance of cold, does not it show an equally surprising increase of that ganglionic force on which depends animal heat as well as nutrition?

We remind those who devote their time to the study of insanity, that to study it in asylums only is like studying tubercular consumption in its second stage. That its first stage is hidden in the midst of a domestic circle either incapable of understanding its phenomena, or anxious to hide whatever may be understood. If they look more carefully into the matter, they will agree with M. Moreau, of Tours, who observes: "That almost all mental diseases are, as it were, foretold and preceded by symptoms which generally pass unobserved, such as fainting, giddiness, and vertigo, and by nervous sensations arising from different parts of the body like the aura epileptica, sensations, which the patients themselves compare to excitements, or to electrical shocks."

In giving this direction to their researches, mental pathologists will not venture into unexplored paths—they will merely return to an old one, and resume the broken thread of medical tradition which, in the time of Hippocrates, sought an origin for insanity in certain morbid conditions of the principal viscera.

Thus have we incidentally shown that the study of hysteria is the preface to that of insanity, and that the study of both leads to the conviction that there are two centres of nervous power as well as two nervous systems—the arctic and antarctic poles of the human microcosm, on the due ponderation of which depends the moral and mental, as well as the physical, health of man.

CHAPTER VII.

ON THE SPINAL SYMPTOMS OF MENSTRUATION.

As nervous excitability increases, lesions of sensibility and motility become frequent.

When the organs of vegetative life are seriously disturbed in their functions or structure, pain is experienced, sometimes in the viscera themselves, but most frequently in some portion of the walls of the cavities in which they are contained. The spinal nerves which are distributed through the viscera receive the morbid influence, transmit it to that portion of the spinal column whence they originate, and the pain is then reflected through the spinal nerves which proceed to the cavities containing the viscera.

The ovarian nisus is the function of the ovarian nerves. By forcibly attracting the fluids to the ovaria, these bodies become congested, and by their reaction on the uterus this organ likewise becomes congested. This increase of nervous activity, heightened by the gorged state of the vessels placed within its sphere of activity, determines the pains which constitute the neuralgia of menstruation.

The reproductive organs are the only organs of the body whose function is painful even when most healthily performed. Menstruation is a species of parturition, and it is seldom healthy unless attended by spinal pains, which are diminished in, or do not attend the unhealthy menstrual secretion of chlorotic women; but, as they recover, the menstrual epochs are attended by an increased amount of spinal pains.

The ovary may transmit pain to the spinal nerves by means of the splanchnic nerves. The upper part of the womb is supplied with spinal nerves from the intercostal branches, through the medium of the splanchnic nerves and spermatic plexus, and any disease seated in that part of the womb may cause the reflected pains to be felt along the intercostal nerves which arise from the same part of the spinal cord as the nerves furnished to the fundus of the uterus. The middle and lower portion of the uterus is furnished with branches of spinal nerves from the lumbar plexus through the medium of the hypogastric, and when this part of the womb is diseased, the pains are transmitted along these nerves and reflected on those which arise from the lumbar plexus, and therefore along the nerves supplying the muscles of the lumbar portion of the back, the walls of the abdomen, inside of the

thighs, the front of the leg, and even sometimes to the instep. The spinal nerves distributed to the vaginal portion of the generative intestine arise from the sacral plexus; hence disease of the vagina causes pains to be reflected along the nerves which come from this plexus, and as this plexus furnishes nerves to the sacral region, to the perineum, the posterior part of the thighs, the calves of the legs, pains may be experienced in all this course, and, in some rare cases, even in the soles of the feet. It will therefore be seen that it is not possible to ascribe the dorsal and the hypogastric pains each to a distinct set of nerves.

As anatomy and physiology do not suggest a classification of abdominal pains, we shall adopt that offered by nature, and divide them into dorsal and hypogastric. The following table will give an idea of the degree of frequency of the ordinary neuralgic symptoms of menstruation at successive periods of life:

TABLE VI.

SYNOPTICAL TABLE OF THE SPINAL SYMPTOMS OF MENSTRUATION.

Spinal Symptoms of Menstruation.	During its Prodromata.	During its Regular Establishment.	At its Cessation.	Influence of Connexion on the Spinal Symptoms.	Influence of Parturition on the Spinal Symptoms.	Influence of Cessation on the Spinal Symptoms.
	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)
Dorsal Pain . . .	45	75	70	Increased . . 26 Decreased . . 4 Same . . . . 5 None 65	Increased . . . 31 Decreased . . . 3 Same . . . . . . 10 None 56	Increased . . 46 Decreased . . 7 Same . . . . 17 None 30
Hypogastric Pain	29	62	51	Increased . . 23 Decreased . . 3 Same . . . . 7 None 67	Increased . . . 22 Decreased . . . 5 Same . . . . . . 4 None 69	Increased . . 30 Decreased . . 9 Same . . . . 12 None 49

N.B.—The numbers in each of the columns will amount to more than 100, as many women being affected with more than one symptom are classed under the respective symptoms.

With regard to the progress of cerebro-spinal symptoms in general, we find that in the majority of cases the symptoms precede the menstrual flow, and abate as it progresses:

	Per cent.
That they subside on the appearance of menstruation in .	28
That they subside on the second or third day in . .	19
That they last until the end in	10
That they last several days after in	3
That there was back pain at the time only in . . .	4
That there was hypogastric pain at the time only in . .	3

A great intensity of pain in the cerebral and spinal regions is seldom to be met with at the same time, for the two are in general so counterbalanced, that when a great amount of cerebral symptoms exists, the spinal symptoms have not a similar intensity; and it will be found that whereas during the prodroma of menstruation, and during "the dodging time," the cerebral symptoms are most intense, the spinal symptoms are in general more common and annoying during the period of the full activity of the generative function. At cessation, however, the intensity of both groups of symptoms is sufficiently augmented to warrant the popular belief in the dangers of the critical time.

Dorsal Pain.—By this we mean, a pain experienced in the spinal cord, which pain is fugitive in its upper portions, and principally settles in its lower extremity, radiating to the small of the back, the loins, thighs, and legs. This pain is generally described as an aching or numbing pain, a gnawing, dragging, burning, or grinding pain; a sensation as if the back were broken, or as if it were opening and shutting—varieties of pain, as are those of neuralgia in other parts of the body. Their intensity varies from that slight pain, which does not prevent moving about, to that which for a time usurps the place of all other sensations, and impels women to seek relief by rolling on a rug; it sometimes even confines them to their beds for a few days.

The frequency of the pain in the back as a prodroma symptom, is	45 per cent.
As a symptom of well-established menstruation	75 „
And at its cessation	70 „

We consider the growing pains of girls, which are often severe in the ankles, the legs, the knees, the thighs, and the lower part of the back, particularly when they are accompanied by pseudo-narcotism, to be frequently premonitory of menstruation. Many of the cases treated as spinal irritation have no other origin; it was so certainly in three cases for which we were consulted, for the first appearance of menstruation removed the symptoms for which severe treatment had been applied for several years.

Dorsal pains are the frequent accompaniment of a deficient menstrual flow, forming one portion of the pains called dysmenorrhœa, and indicate the ovarian nisus, in the absence of the catamenia. We have seen the frequency of dorsal pains during the "dodging

time," and after cessation, but they are also symptoms of pregnancy, of parturition, and of diseases of the ovaries and of the womb. Owing to the fact that both the womb and the ovaries are supplied by the same ganglionic and cerebral nerves, it is not always possible to affirm which pains emanate from the womb, and which from the ovary. It is, however, clear that severe lumbar pain can be caused by the ovary alone, since it exists in cases of congenital deficiency of the womb, and is often met with alone before the womb has begun, or after it has ceased to menstruate.

Hypogastric Pain.—We call by this name the pains generally referred to the regions of the ovaries, and to the uterine regions. This pain differs from the symptom just described, by being for the most part peculiar in its nature. The patients generally describe it as a pressing, a forcing, or as a bearing-down pain. It seems to indicate a tenesmus of the cervix uteri, to have an expulsive character, and to mark the direction of those neural currents which direct the course of blood towards the womb, and procure its expulsion from that organ.

It is also evident, that when well localised in the ovarian regions, it is to be referred to those organs, just as the surpubic pain more particularly indicates uterine congestion, particularly when attended by sensations of uterine tenesmus. This explains one of the difficulties in the diagnosis of uterine and ovarian diseases, and permits some to ascribe an ovarian origin to dysmenorrhœa, while others consider it to be generally caused by inflammation of the neck of the womb. We believe it may depend upon both causes, and when discussing the diagnosis of sub-acute ovaritis, we shall attempt to show when pain has an ovarian origin, and how this is to be inferred. We have heard the pains described as a burning heat in both ovarian regions, radiating to the abdomen and to the thighs. These pains are frequently accompanied by the dorsal pain.

The frequency of hypogastric pain as a prodromic symptom is only	29 per cent.
As a symptom of confirmed menstruation .	62 ,,
And at its cessation	51 ,,

Hypogastric pains are frequent accompaniments of a deficient menstrual flow, of amenorrhœa, and of the cessation of menstruation. They attain to great intensity in what is called false pains, and their maximum, in parturition; but although the amount of pain is different, it is felt by the same nerves, and is subservient to the same end, the separation from the womb of the fœtus, of the decidual membrane in certain forms of dysmenorrhœa, or of the menstrual flow.

Hysterical Pains.—Besides these regular spinal pains of menstruation, the performance of the menstrual function may be accompanied by anomalous pains, which are called hysterical, to denote their frequent coincidence with the hysterical condition of the nervous system. When the reproductive organs have induced an hysterical disposition of the nervous system, it becomes more susceptible to neuralgia, and intense local pains arise sometimes in the weakest part of the body, without its being possible to explain them. Severe tooth-

ache, intense abdominal pains, submammary pain, are frequently experienced by hysterical patients.

It must be moreover remembered, that as the nervous temperament becomes developed, the body becomes more obedient to the will, and as hysterical patients can to a certain extent repel or bring about an hysterical fit, so likewise can they induce or increase the functional disturbance of certain organs, by concentrating their whole attention upon those parts on their first indications of suffering.

This seems to be the pathology of many cases of intense neuralgia in joints, and in the vertebræ, from which the patients suddenly recover, when the powers of the mind have been strongly diverted by some irresistible necessity of exertion. Should the chest be slightly affected, the hysterical woman may so dwell upon her local sufferings as to develop symptoms which mimic phthisis, although the lungs contain no tubercles. Dr. Theophilus Thompson, in drawing attention to these cases, stated that an hysterical patient of his could at will induce an attack of hemoptisis.

THERAPEUTICAL INDICATIONS OF SPINAL PAINS.

1. To treat the neuralgia by sedatives, of which the various preparations of opium are the best. Their use should be begun as soon as possible, for it is much easier to obviate pain than to relieve it when acute. Squire's solution of bimeconate of morphia is a very good preparation, and from five to ten drops should be given every three or four hours until the abatement of pain. This is only a new application of an old form of the same valuable drug, for Fothergill and Petit Radel long since gave, for painful menstruation, a pill composed of a grain of thebaic extract every hour until the pain abated. From thirty to forty drops of vinum opii in three ounces of very thin starch as an enema may also be given, repeating the remedy according to the urgency of the case, one, two, or three times a day. Opiates not only calm pain, but, as Dr. Gregory has remarked, often facilitate the menstrual flow. This reminds us of the great utility of opium in intestinal obstruction. still too frequently treated by drastics. When opiates are required to assuage the tenacious pains attendant on the cessation of menstruation, we have continued them for weeks without producing the toxic effects of opium.

2. To ascertain, after the subsidence of the pain, whether it be not a symptom of ovarian or uterine disease, so that by curing this we may prevent its recurrence.

3. To regulate the menstrual function.

4. To strengthen the nervous system by the plan of hygiene most suitable to the patient.

LESIONS OF MOTILITY.

Such are the lesions of sensibility to which the ovarian nisus gives rise; but the spinal nerves may be so modified by the menstrual function as to cause lesions of motility in the parts of the body which they supply. Hippocrates had already noticed the danger of claudi-

cation in girls about the period of puberty; and we have seen two delicate girls, whose lower extremities were so painful and benumbed that walking was intolerable—symptoms which disappeared when the menstrual flow began.

F. S., for four months previous to first menstruation, felt her hands so benumbed that she could not dress herself.

A. E. lost the use of her limbs, without any cerebral disorder; she could neither walk nor dress herself for two years previous to the first appearance of menstruation, at sixteen, after which she soon recovered, and never afterwards experienced anything similar.

In his work on "Local Hysterical Affections," Sir B. Brodie has enlightened the profession respecting the cases under consideration. Their dependence on the ovarian nisus is evident from the fact that they generally come soon after puberty and when menstruation is irregular. With respect to the frequency of hysterical symptoms, Sir B. Brodie does not hesitate to say "that four-fifths of those who in the upper classes are said to labour under diseases of the joints, labour under hysteria, and nothing else. Such cases are frequently mistaken for those of ulceration of the intervertebral cartilages and bodies of the vertebræ, and in consequence of this unfortunate impression on the mind of the medical attendant, I have known, not a few, but very numerous instances of young ladies being condemned to the horizontal posture, and even to the torture of caustic issues and setons, for several successive years, when air and exercise, and cheerful occupations, would probably have produced a cure in the course of a few months." The persistance of these affections without aggravation is another reason to infer their nervous origin, but for other details we refer the reader to the work alluded to.

Paralysis has been noted as an immediate dependant on chlorosis. Dr. Sandras cites two interesting cases—one of a lady, pale, weak, with very small pulse, and habitual giddiness, who was suddenly taken with hemiplegia. As she very deficiently menstruated, Sandras did not bleed, but applied a few leeches to the thighs. The leech-bites only let flow a little red serum, and the patient became worse. Seeing the danger of debilitating measures, he gave strengthening medicines, and with such benefit that in two months the patient was able to go to the country, where she perfectly recovered.

When the cessation of menstruation is attended by serious abdominal disturbance, one of the lower limbs may be affected by a loss of use as well as by intense pain.

Case 25.—Jane A., aged forty, with dark hair, grey eyes, of small stature, nervous constitution, and slender make, was admitted at the Farringdon Dispensary on February 8, 1852. After having frequently suffered for two years with violent headache and giddiness, she menstruated for the first time between fifteen and sixteen; was regular from the first, and continued so, and very abundantly, during seven days every month. She married at sixteen, became pregnant immediately; had seven children, the last in her twenty-sixth year; was always poorly until she quickened, and in three pregnancies she menstruated regularly up to the period of parturition. Last summer

she was treated, at the Royal Free Hospital, for rheumatic fever; and after having been confined to her bed for three weeks, she returned to her domestic duties, merely complaining of some slight pain, extending from the left hip to the great toe. Menstruation proceeded regularly during the patient's stay at the hospital, appeared four times after her return home, and then stopped—a circumstance which made her believe she was pregnant. The patient complained of an intolerable increase of pain in the left lower limb; and on examination we found that pressure on the spine did not increase or cause the pain. To all appearance the left limb was as sound as the right, and the pain was said to arise from before the great trochanter, and to gain the back of the limb, following the course of the great sciatic nerve and its subdivisions to the toes. The patient was not strong, the pulse was weak, the urine clear and of the usual colour. We ordered a blister to the spot which was the most painful, pills of compound extract of colocynth, and a sedative mixture. The blister did not relieve the excruciating pain. Turpentine embrocations were then applied, the other measures continued, and the blister was repeated, without the least benefit.

March 8th.—The patient said that she no longer thought herself pregnant, and she suggested that her pains might have been caused by the sudden cessation of menstruation five months previously. On learning that she had lately had flushes and nightly perspirations which she had never before experienced, we adopted the patient's view of her case, and ordered her to take, as an emetic, one scruple of ipecacuanha with one grain of tartar-emetic, to continue the mixture and the pills, and to take in milk a teaspoonful of flower of sulphur on going to bed at night.

15th.—The heats and perspirations had increased; the pains had much abated. We ordered another emetic, and continued the other measures.

29th.—The pain was very trifling, and the heats, flushes, and perspirations were more frequent, coming on not only on exertion, but in bed, at night and in the morning.

April 6th.—We ordered the following powder: flower of sulphur two ounces, bicarbonate of soda two drachms, and two scruples of ipecacuanha—a teaspoonful in a little milk every night.

June 11th.—She had had no return of the pain; but whenever the flushes and perspirations ceased, she suffered either from headache or from the *sensation* of something working to bring on the pain in the leg. It is now more than ten months since she menstruated.

Jane A. has not suffered in any other way from the cessation of menstruation; and when we consider that she was subject to a copious discharge every month, we can understand that she should feel the effects of its sudden cessation; and, further, when we remember that in her constitution there was a great predominance of the nervous system, it is not surprising that this system bore the brunt of the sudden shock, particularly that portion of it which was predisposed to illness by the previous attack of rheumatism.

By continuing the medicines prescribed, and a careful regimen, we

have no doubt that the patient will be enabled to get safely over the change of life; but if she were to become careless in her diet, and neglectful of her treatment, the previous violent pains, or some other disease, would probably soon appear.

A case somewhat similar to that of Jane A. is recorded by Gardanne, p. 394. He mentions, that a woman of a strong constitution, at her forty-fifth year, suddenly ceased to menstruate; and at the same time she was seized with violent pains in the left thigh, which increased so rapidly, that at the end of four months she was not able to move the limb. As the woman had suffered from syphilis in her youth, mercurials were given, but without effect. Sabatier and Gardanne then advised moxas to be applied to the leg, which produced slight fever and great perspiration, and restored the use of the leg to the patient.

Acting on the same principle of preferring a lesser to a greater evil, in two cases wherein loss of voice occurred at the change of life we have given signal relief to the patients as soon as we had been able to determine the daily appearance of the flushes and perspirations; and as the patients had previously been under long and judicious treatment without much benefit, and as the great improvement in the voice of both ladies coincided with this determination to the skin, we consider that the patients' recovery should fairly be ascribed to that cause.

Paraplegia and paralysis of the bladder have been twice seen at puberty by B. de Boismont.

In a case lately published—*Union Medicale*, Tom. vi., No. 125—a chlorotic lady became paraplegic in the midst of menorrhagia. The paraplegic symptoms lasted six months, and were cured by steel, two issues, and sulphurous baths.

The following case occurred in the practice of a medical friend:

Case 26.—The lady's-maid of a patient, being about forty-five years of age, complained of violent pain in the loins, for which he ordered a mustard poultice; and, as the pain persisted, he subsequently recommended a blister to the lumbar region. This application was immediately followed by paraplegia, and a neighbouring practitioner, who was immediately sent for, gave it as his opinion, that the application of the plaster had determined the paralysis of the lower limbs. Although this assertion was contradicted by another medical man, who had been afterwards called in on account of the persistence of the paraplegia, our friend received several letters from the solicitor of the family, menacing him with an action; but he set them at defiance, and he heard nothing more of this attempt to make a medical attendant pay for an occurrence which it was impossible to foresee. The patient went home to her friends, and a country practitioner, more clear-sighted in this instance than the eminent men of London, putting together the circumstance of the patient's age and the previous irregularity of menstruation, applied leeches to the womb. The result was a gradual diminution of the paraplegia, and now the patient is able to walk with perfect ease. Thus the local application of leeches may be useful to cure disease at cessation; but in general,

when it is necessary to draw blood, it should be from the arm.

Paraplegia has been a consequence of parturition—*Lisfranc Clin. Chir.*, vol. ii., p. 199—has cited several cases of paraplegia depending upon inflammation of the womb. When this was cured, so was the paraplegia.

THERAPEUTICAL INDICATIONS OF LESIONS OF MOTILITY.

1. To regulate the menstrual function.
2. To strengthen the constitution.
3. To distract the patient's attention as much as possible from her sufferings, stimulating her to use her limbs in spite of the pain. It must be remembered that the muscles are not incapable of obeying volition, and when they are not exercised, the loss of power is in the mind, and a forcible impression on the patient's mind is the heroic remedy.

It has been shown how useful an application are leeches to the womb to restore the movement of limbs which had been paraplegic for several months at the period of cessation. Favouring cutaneous exhalation has also been sometimes instrumental in removing pains and loss of power in one or more limbs, as in the case of Jane A.

CHAPTER VIII.

ON THE CRITICAL DISCHARGES OF MENSTRUATION.

> The quantity of a critical discharge is of far less importance than its quality and the punctuality of its performance.

MANY morbid or healthy functions of vegetative life are repetitions of the same process, because they are presided over by the same ganglionic nervous system. Thus, in all fevers, in active hemorrhage, as in menstruation: 1st. There are the nervous prodromata, which testify to the existence of a hidden force, by which the vegetative nervous system is being moved to action. 2ndly. There is a period of elaboration whenever the circulating system shows that it responds to the appeal of the nervous system, by the rapidity or fulness of the vital current. 3rdly. There are the critical discharges by which the blood-vessels are relieved, and the nervous system restored to healthy action. We have considered the varied phenomena which manifest the ovarian nisus, and its action on the sanguineous system, and shall now pass in review its various critical discharges. It has been well established by Hippocrates and his numerous commentators, that, in fever, the benefit of a critical discharge is not to be measured so much by its quantity as by its appearing at the appointed time. This is the case with active hemorrhages and with the menstrual flow. Again, with regard to the nature of the critical discharges by which the ovarian nisus is relieved, it would be taking a very narrow view of the phenomena to suppose that this monthly fever of the female organism had no other effect than to let flow a portion of blood from the womb. The ovarian nisus has a more extended influence, and is relieved by a mucous as well as by a sanguineous discharge from the generative intestine, by an increased mucous discharge from the intestinal canal, by abundant perspirations from the skin, as in fever, by saline substances deposited in the urine. Such are the usual effects of the ovarian nisus, and, without becoming pathological, it may also find relief by causing the sanguineous fluid to transude from some other mucous membrane than the uterine; from the ulcerated surface of the skin, or even from its unimpaired structure.

We shall proceed to sketch the phenomena of these critical discharges of menstruation in the order in which they have been enumerated.

CHAPTER IX.

ON THE SANGUINEOUS DISCHARGE OF MENSTRUATION.

"The menstrual blood should be like the blood of a victim."—HIPPOCRATES.

A MUCO-SANGUINEOUS discharge from the generative intestine is the normal crisis of the ovarian nisus. We mean by generative intestine the whole extent of the canal through which the ovum passes from the ovary to the vulva.

In many of the lower animals the surface destined to elaborate food is a mere *rentrée* of the skin, so that there is but one orifice for the ingestion of food and the elimination of its residue, and it is on this plan that the generative intestine is formed in all animals. The generative intestine forms a continuous canal; and although in woman this is not the case when the apparatus is in a state of quiescence, it becomes one canal when impelled to action by the ovarian nisus or by sexual stimuli.

We refer the reader to the works of Pr. Goodsir and Jobert de Lamballe for the latest anatomical and microscopical details respecting the uterine surface, while we proceed to consider the nature and extent of influence exerted over it by the ovarian nisus.

At the extremity of the generative intestine is the simplest of glands—the germiparous ovary, and the ovarian nisus may so distend it with blood, and ulcerate its coats, as to let the germ burst from it as from a "matrix superior." To receive the ovum the Fallopian tube embraces in its leaf-like folds that part of the ovary ready to expel a germ. *So that the first origin of a menstrual discharge is to be found in the ovary;* and if, owing to adherencies, the Fallopian tube cannot circumscribe the ulcerated portion of the ovary, the ovum and its lochia and blood to a considerable amount may pass into the peritoneum, and cause peritonitis, and even sanguineous pelvic tumour, as will be shown hereafter.

All those who have had the opportunity of viewing the Fallopian tubes recently subjected to the ovarian nisus, or after menstruation, have described them as being in a swollen and highly congested state.

All recent observers—Gendrin, Paget, Dr. Hannover, and Dr. Letheby in two cases,—have described the blood and mucus which they found in the Fallopian tubes. In Pr. Paget's report of Mrs. Manning's examination, p. 28, it will be seen that the fimbriated extremity of both tubes were closed, therefore the blood they contained

could not come from the ovaries. It was different in appearance from the blood contained in the womb, so we believe with Pr. Paget that it must have been secreted from the internal surface of the tubes; and if it happen in one case, why may it not do so in others? We are permitted by Pr. Owen to state that he also believes that the menstrual secretion may take place from the whole surface of the generative intestine.

We have therefore here a second origin of the menstrual critical discharge, and when this quantity is considerably increased beyond its usual limits the blood may flow from the Fallopian tubes into the peritoneum—the only possible explanation of the following cases:

Case 27.—The late Mr. John Shaw examined a young lady, who, while in full health, was suddenly seized with menorrhagia, accompanied by a succession of fainting fits, under which she succumbed. A large mass of coagulum was found in the abdomen, but the source of the hemorrhage was a mystery, until the Fallopian tubes were laid open, when it was discovered that, for the space of about an inch and a half of one of them, its lining membrane was pointed with bloody spots, from which the fluid found in the peritoneum had been rapidly poured out.

Case 28.—Mr. Barlow—*Lond. Med. Gaz.*, vol. xxv.—mentions the sudden death of a patient during an attack of purpura hæmorrhagica, which occurred five days after a miscarriage of six months. On opening the body, blood was found in the Fallopian tubes, for small coagula still projected from their orifice.

Rokitansky has twice seen this hemorrhage from the tubes in women affected with typhus fever, one of whom was pregnant. The same circumstance was noticed at the Hôtel Dieu of Paris, in several instances during the epidemic puerperal fever of 1746.

Case 29.—Mr. Field, of Stanhope-terrace, has mentioned to us the case of a lady who, while pregnant, took fright; she died soon after, and it was found that both the womb and one of the oviducts had been ruptured, but in such a way that the peritoneal membrane remained *intact*, therefore the blood which was found in the abdomen must have come from the tubal openings.

Case 30.—Mr. Russell—*P. M. and Surg. Journ.*, vol. xii., p. 104—relates the case of a lady, twenty-five years of age, who had been four months married, and who menstruated a fortnight before he was called to attend, for sudden symptoms of collapse, of which she soon died. Large clots were found in the abdomen; the left Fallopian tube was ruptured towards its inner third; the ruptured portion was distended by a mass of fibrin, about the size of a large hazel-nut, in which no ovum was found; the walls of the tubes were thin; the uterus was enlarged and lined with decidua.

In all these cases the observers do not seem to have ascertained whether there existed any obliteration of the uterine extremities of the oviducts. It appears, then, that this occurrence has been principally observed in the puerperal state, in abortion, or in connexion with metro-peritonitis. That this tubal hemorrhage is not always fatal is rendered probable by the possibility of recovery from ab-

dominal wounds, in which blood has been effused into the abdomen; those fibrous bodies which are sometimes found in the peritoneal cavity of women would be thus satisfactorily explained, their origin being accounted for in the same manner as the fibrous bodies sometimes found in articular cavities, to which Professor Velpeau has ascribed an hæmatic origin.

The third and principal source of the critical discharge is that portion of the internal surface of the womb which is lined with the decidual membrane. Many eminent men believe this to be the only source.

It seems as if, to permit the menstrual discharge, the ovarian nisus first modified the tissues of the womb, causing it to become congested, softer, more spongy, and the blood to permeate from its mucous surface; pressure of the hand may do the same when applied to the womb of a woman deceased during menstruation. The neck of the womb was likewise found swollen, by Dr. Ripault, of Dijon, and its blood vessels varicose at the period of menstruation. The vaginal mucous membrane was congested and of a livid hue.

The mucous lining of the generative intestine is also impelled by the ovarian nisus to secrete a greater amount of mucous fluid during the menstrual period.

That is probably the case with the mucous membrane lining the Fallopian tube, and doubtless occurs in the abundant mucous crypts lining the neck of the womb and the vagina. Although for the better comprehension of all the phenomena of the menstrual hemorrhage, and of its attendant mucous secretion, we treat of them in separate chapters, they are indissolubly connected, being two portions of one critical discharge; a fact which is likewise proved by the chemical or microscopical examination of the menstrual discharge.

Microscopically examined, the menstrual fluid is found to consist of—

1. Numerous blood corpuscules.
2. Mucous globules.
3. Epithetial scales.
4. Blood serum.
5. Mucous fluid.

Much time has been lost by some authors in attempting to prove that the menstrual flow was only an *excretion;* others pretend that it is a *secretion;* in truth, however, it is both one and the other, for if the blood flows from the womb by imperceptible pores, as it does from the skin, in cases of vicarious menstruation, the mucus with which it is mixed to constitute the menstrual flow may be modified in quantity and nature like all other secretions.

Before examining briefly the quantity and quality of the menstrual flow, we must allude to another effect of the ovarian nisus on the body of the womb—the production of a decidual membrane. A few days after the sanguineous flow has ceased, a *magma* is passed with the mucous flow. When examined, it is more or less extensive, elastic, and of a bluish tint. It is found to be albuminous by che-

mical tests, and the microscope shows that it is formed by the cylindrical epithetial cells which line the uterine cavity. Such at least is the result of Pouchet's elaborate investigation, which proves that this catamenial exudation is an abortive attempt to place the uterus in a position to receive and attach the ovum to its cavity.

Such is the *normal* condition, but at other times the virgin womb produces at each menstrual period a smooth velvety false membrane, in everything like the decidua, except that it contains no fœtus. This false membrane, as Coste remarks, would be called a product of inflammation, if met with on any other mucous surface. In other women, unmarried as well as married, this membrane may increase, combine with the solid constituents of the blood, and come away as an ovoid "mole" in the midst of parturient pains.

These phenomena seem to be the result of a morbid ovarian nisus, and we think it would be well to give to them exclusively the term of *ovarian dysmenorrhœa.*

AMOUNT OF SANGUINEOUS DISCHARGE.

The quantity of the sanguineous discharge is to be measured by the rapidity of its flow, and the quantity passed: we must depend on the vague information of women, by whom it was said to have been

Abundant in	47 per cent.
Moderate in	11 "
Very little in	40 "

A somewhat more precise mode of ascertaining the quantity of the menstrual flow is by the number of days that it lasts.

The following table shows how long it most frequently lasted in London, in Paris and its vicinity, in Copenhagen and in Denmark.

TABLE VII.

Number of Days.	Paris and Vicinity.	London.	Copenhagen and Denmark.	Number of Days.
		1 hour in the day 2		
1	35	8	19	1
2	62	47	110	2
3	119	205	207	3
4	78	207	138	4
5	46	66	88	5
6	21	26	54	6
7	12	170	21	7
8	172	37	98	8
9—15	17	9	11	9—21
Total .	562	777	746	Total.
	B. de Boismont. Prize Essay.	The Author. Collected only from the well-to-do of the lower orders.	Dr. Ravn. Communicated to the author from an unpublished statistical inquiry of the R. M. and C. S. of Copenhagen.	

This table again proves the influence of climate in diminishing the duration of the menstrual flow. This influence is confirmed by one of Dr. Robertson's correspondents, who states that menstruation in British Guinea is not marked by difficulty, pain, or scantiness, but by entire suspension, or great profuseness. Blumenbach also mentions that most of the European women transplanted into Guinea die of menorrhagia; while on the other hand, the surgeon to Sir J. Ross's expedition informs us, that Esquimaux women only menstruate during the summer months, and then only as a mere show.

With regard to the causes of the various durations of the menstrual flow in the same latitude, Dr. Ravn has shown, that while its mean duration was days 4·6 in Copenhagen, it was 4·0 in the country districts of Denmark. It is known to be prolonged in delicate nervous women, and in those who lead an inactive and voluptuous life.

With regard to the duration of the menstrual flow, it must be remembered that the benefits of a crisis do not depend upon the *quantity* of the critical discharge, but that each woman has her own standard, on which depends her health, and that any deviation from this standard must be looked upon with suspicion, for if it cannot be explained by a change in the hygienic conditions, it must depend on

local disorders of the reproductive organs, or on something constitutional, such as chlorosis, incipient phthisis, &c.

We have found the menstrual flow occur with its usual pains during pregnancy oftener than is generally admitted, and without, in many cases, any ground to attribute it to ulceration of the neck of the womb, as has been recently advanced. Denman, and some other writers, deny the possibility of its taking place at this time; but Dewees, Daventer, and Baudeloque, attest the fact. Velpeau has seen eight well-authenticated cases; and on consulting our own notes, we find that the flow continued in eight per cent., as has been already stated.

With regard to the reappearance of the menstrual function during lactation. As a general rule, we find that lactation checks the menstrual flow up to the tenth month. Dr. Meigs, practising in Philadelphia, says, "that he expects his patients to become unwell at the seventh month of lactation;" but more frequently than is generally believed, the periodical flow coincides with the secretion of milk as early as the second or third month of lactation, and this in perfectly healthy women; and we are in a great measure able to confirm the assertion of our own excellent observer, Friend, who says, that "menstruation often continues regularly from the very beginning of lactation, *in lactantibus gracile corpore proeditis*."

The quantity of the menstrual flow may be—1st. Morbidly increased. 2ndly. Morbidly diminished. 3rdly. It may deviate to some other organ.

1. THE QUANTITY OF THE MENSTRUAL FLOW MAY BE MORBIDLY INCREASED.

The quantity of the menstrual flow is generally greatest at the beginning and at the end of reproductive life. Thus, in thirty per cent., we have found this function begin by a very considerable flow; in eight per cent. it was said to have amounted to a flooding, and to have lasted from eight to ten days. Chomel—*Union Méd.*, Tom. v., No. 7—mentions the case of a girl from ten to eleven years of age who was flooded at first menstruation. The flooding lasted several months, resisting all constitutional treatment, and was at last only cured by cauterising the neck of the womb.

The frequency of flooding at the dodging time is well known to the profession.

We have found the menstrual function to terminate gradually in	39 per cent.
„ by a succession of floodings in .	19 „
„ by a terminal flooding in . . .	14 „
„ by alternations of a little and considerable flow in . . .	10 „
„ by a sudden stoppage in . . .	18 „
With respect to the periods of its occurrence, the flow appeared at irregularly protracted intervals in	13 „
It appeared at irregularly contracted periods in	2

B. de Boismont met with flooding at cessation in 57 out of 80 cases.

Flooding is less frequent when the menstrual function is regularly established, but there is a deep-rooted and most dangerous prejudice, which makes women believe, that however great may be the discharge, if it occur periodically, it is in perfect accordance with the views of nature. Frequently have we drawn a parent's attention to the debility and ill health following an habitually too copious flow, and as frequently have we obtained the same answer—" She is always so;" so difficult is it to enforce the conviction, that the fact of a girl *being* "*always so*," is the very reason for adopting such measures as should prevent her *being ever so.*

Contrary to the general belief, plethoric women are not in general most liable to profuse menstruation, for this derangement is much more frequently met with in those of a constitution resembling that of the patient described in the case last related—viz., nervous, irritable, and thin. This fact holds good in both sexes. Bordeu has justly remarked, that many men evidently plethoric never bleed, while those most liable to do so are the thin, nervous, and irritable, who have something feminine in their appearance and constitutions—a consideration which led him to admit that hemorrhage, instead of being the constant result of a superabundance of blood, depends on an hemorrhagic cachexia, or on a state of the circulating system, known by the slight febrile excitement which precedes the critical emission of blood, and a full, quick pulse, often hard, and rebounding under the finger. In men thus constituted, the emission of the smallest quantity of blood is often followed by great relief, while profuse bleeding would be fatal exactly as it is with the periodical hemorrhage of women. Therefore, in some very rare cases amongst women who have attained their full growth, we may look upon habitually profuse menstruation as an *autocratic* depletion, as the older authors would have said; and remember the saying of Baglivi—" Sanguis superfluis non est sistendus, sed sinendus quò natura velit."

In several cases we have known connexion to determine the first appearance of the menstrual flow; in one case connexion always determined a sanguine discharge; but, in general, menstruation is regularised by marriage.

It is well known that during the second decade of reproductive life, inflammatory affections of the neck of the womb often give rise to flooding, while during the last decade flooding is more frequently the effect of uterine polypi or of cancerous affections.

THERAPEUTICAL INDICATIONS OF MENORRHAGIA.

1. To let the flooding continue so long as it has no effect upon the strength of the vascular system, as indicated by the pulse and the heart's action.

2. To check the flow by placing the patient in the horizontal position on a horse-hair mattress, with light covering, in a cool room, and by giving cold acidulated drinks made with the *mineral* acids, alum whey, or nauseating doses of antimony.

3. To use local measures: iced vinegar and water to the inner parts of the thighs and to the lower part of the abdomen; a lump of ice applied to the neck of the womb, or, in cases of flooding from cancer, powdered ice, according to the plan suggested by Dr. James Arnott. Should these fail, the vagina or the neck of the womb should be plugged.

4. To ascertain, when the flooding is over, whether it depends upon removable causes, such as uterine polypi, or inflammation of the neck of the womb.

5. To follow the examples of Fothergill, Hufeland, and Lisfranc, and prevent the floodings and other accidents of cessation, by taking very small quantities of blood from the arm in the few days that follow the flooding, or on the non-appearance of the menstrual flow. Three or four ounces of blood taken in this way at successive months often prevents great mischief; and it must be borne in mind that at the dodging time, or after cessation, no ganglionic centrifugal currents should be encouraged by pediluvia, hip-baths, mustard poultices, and similar applications to the lower extremities.

2. THE SANGUINEOUS DISCHARGE MAY BE DEFICIENT, OR MAY NOT APPEAR.

This most frequently occurs during the first decade of uterine life, and its deficiency or disappearance is called *Amenorrhœa;* but this expression should be carefully distinguished from the sudden suppression of the flow, and reserved for cases in which the absence of the sanguineous discharge cannot be attributed to uterine or ovarian disease, to chlorosis, or to phthisis, unless, however, the name be coupled with some adjective, to give it a distinct meaning. The absence or deficiency of the menstrual flow is frequently, as in chlorosis, unattended by pain, and seems, as then, to indicate that the deficiency depends upon the ovarian nisus being below par; but in other cases the deficiency of the menstrual flow is accompanied by great pain, and depends more upon the difficulty with which the flow finds exit than on any absolute deficiency. When this is the case, it depends on congenital or accidental stricture of the womb, and to this form we would reserve the name of *uterine dysmenorrhœa.*

When the menstrual flow is either absent or deficient in the unmarried, it should always excite alarm, unless it can be explained by change of residence, nature of occupation, kind of food, distress of mind, or convalescence.

The following remarks of Dr. Meigs will show the urgency of considering carefully cases of checked menstrual flow:—"Interruptions of the monthly flux, produced suddenly, may leave the whole reproductive apparatus engorged, and even sub-acutely inflamed. The currents introduced into them by the spermatic and uterine arteries, and the branches of the ischiatic and the nerve streams that accompany all these vessels as their regents and moderators, these are disordered in their very structure, crasis, and chemical constitution, and the next period of elimination may fail, because the ovarian stroma is become unhealthy. But this ovarian stroma, this vitelliferous, and therein

germiferous organ, whose importance I proclaimed in my second letter, has now become a disturber of the constitution. Its nervous connexion and relation to all the plexuses and nerves of the whole splanchnic system, enable it to call them into sympathising disturbance, and the health is overthrown. The emulgent artery, the cœliac, the mesenterics, and all the concomitant *cortège* of nerves are disordered, and now we have disordered renal action. The vast portal system no longer plays its healthful part in the elimination for which it is provided and appointed. Emaciation, opaque skin, dyscrasia of the blood, palpitation and irregular action of the heart, with consequent morbid states of the innervations, proceed from bad to worse, and we behold the victim of a checked menstruation, labouring under all the complications expressed in the term chlorosis, or green sickness. But if all this may come from a check of an established menstrua, *à fortiori* it may spring from a hindered or prevented one."

THERAPEUTICAL INDICATIONS OF A DEFICIENT MENSTRUAL FLOW.

1. To ascertain how far it may depend upon stricture of the neck of the womb.
2. To cure any constitutional complaint by which it may be caused.
3. To strengthen the constitution by tonics, steel, and hygienic medicines.
4. When no constitutional disease is present, and the strength is improved, to use local measures to bring back the menstrual discharge.

During the three or four days previous to the probable period of the appearance of the flow, the patient should take one or two of the aloes and myrrh pills, to produce moderate action of the bowels, in imitation of that by which nature so often begins, or accompanies, the menstrual discharge; the legs should be placed in a *pail* of hot water on going to bed, or a warm hip-bath may be given, with or without the addition of mustard-flour; mustard poultices may be applied to the inner parts of the thighs and to the breasts on alternate nights, but they must not be left long enough to blister the skin. Linseed-meal poultices should be also applied to the lower part of the abdomen, so as to cover the uterine and ovarian regions; and something warm should be drank by the patient when in bed.

These measures should be repeated every month, and, if unsuccessful, in addition to the above, six or eight leeches may be placed on the cutaneous parts of the labia, and removed after they have drawn blood for half an hour; the oil of savine may also be given as we have already stated.

5. The therapeutical indications of *suppressed* menstruation have been noticed at page 91, in giving those of hysterical affections.

QUALITY OF THE MENSTRUAL DISCHARGE.

To use Hippocrates' expression, the menstrual critical flow should be pure blood, like that of a victim, but mixed with an amount of mucus, which increases towards the beginning and the end of the

menstrual period. When the menstrual discharge differs from this standard, it indicates, as extensive statistical inquiries have proved, some morbid disturbance of the reproductive system. The inquiry is of course liable to the uncertainty always attached to facts which only rest on the patient's assertions. Thus the menstrual discharge at the mean period of reproductive life has been said to have been—

Bright in	25 per cent.
Dark in	55 „
Pale in	12 „
With clots in	40 „

The menstrual discharge may be—1st, too serous; 2nd, too fibrinous; 3rd, perverted.

The menstrual discharge may be entirely serous. Thus:

1. J. P. Frank, in his treatise of practical medicine, and Dr. Teissier, of Lyons—*Gaz. Méd.*, Jan., 1844—relate cases in which a purely aqueous discharge from the womb, occurring every month, was substituted for the usual secretion of blood. The patients were not in the family way. These are rare cases; but frequently the menstrual discharge is too serous, particularly during the first decade of reproductive life; not only in confirmed chlorosis, but in scrofulous subjects, and in a considerable portion of the inhabitants of large towns, who are semi-chlorotic, and without stamina. Whenever the flow is sero-sanguinolent, it is a sign of ill health, and until it has regained its bright colour, a chlorotic patient cannot be called cured.

2. The menstrual discharge may be too fibrinous.

When the menstrual discharge is "clotty," it shows that it has been retained in the womb, and ejected with more or less pain, after which the womb again lets the blood coagulate in its cavity, and then again expels it. This occurs principally during the second decade of reproductive life, when inflammatory uterine affections are most frequent. Sometimes irregularly round bodies are expelled from the womb; they are of a dirty white colour, elastic, and the microscope shows them to be entirely fibrinous, or modified clots of the menstrual blood.

3. Perverted menstrual discharge.

This may be green, brown, or like tar, and of an offensive smell. It is sometimes compared to what is passed from the womb during the last days of the puerperal period. When this is the case in the last stages of the function, it need not create alarm, but when it occurs during the regular course of the menstrual function, it must be considered indicative of local or of constitutional disease, and the patient must be carefully examined and watched. These last modifications in appearance seem to depend upon a vitiated state of the mucous secretions of the utero-vaginal canal, and have doubtless given rise to the strong prejudice formerly universally accepted respecting the noxious properties of the menstrual fluid. A prejudice confirmed by Pouchet's assertion, that a day or two previous to the appearance of the flow the vaginal mucus acquires an odour *sui generis*.

THERAPEUTICAL INDICATIONS WHEN THE MENSTRUAL DISCHARGE IS PERVERTED.

1. When the menstrual flow is serous, sero-sanguinolent, or perverted, tonics and steel are indicated.

2. When the menstrual flow is clotty, or too fibrinous during the passage of the discharge, it is necessary then to give opiate enemata as recommended in page 102, and after its subsidence to examine if it be caused by uterine inflammation.

3. THE MENSTRUAL SANGUINEOUS DISCHARGE MAY DEVIATE TO OTHER ORGANS.

We have already stated that in all those healthy, or morbid functions of vegetative life, in which an impelling force, a period of elaboration, and a critical discharge can be traced, the energy of the impelling force is the most important circumstance; the punctuality of its appearance comes second, and with regard to the critical discharge, the loss of one drop may relieve the system as effectually as that of a gallon; and relief may also be effectual when the critical discharge flows from other than the accustomed organs. As this is admitted with regard to the menstrual process, we shall not give cases in proof, being anxious, as the reader will see by the present chapter, to pass lightly over the better known diseases of women, and to lay stress principally on those which are obscure and neglected.

THERAPEUTICAL INDICATIONS.

1. To institute the treatment so as to destroy the irritation, which may draw the blood to some particular organ.

2. To seek for and cure any disease of the ovarian or uterine organs.

3. To direct the nervo-sanguine currents to the uterus by the means detailed at page 91.

CHAPTER X.

ON THE MUCOUS DISCHARGES OF MENSTRUATION.

> "In a portion of the cervix uteri, comprising only three rugæ and their interspaces, upwards of 500 mucous follicles were easily counted; so that it is within the limits of moderation to say that a well-developed virgin cervix uteri must contain at least 10,000 mucous follicles."
>
> DR. TYLER SMITH.

WE have said that the critical discharge from the generative intestine is mucous as well as sanguine, that it generally constitutes the first and last part of each periodic crisis, and the first and last effort of the whole menstrual function; that it is often periodically repeated for years previous to the appearance of first menstruation, and is in some rare cases completely substituted for the sanguineous discharge. Thus, the first result of the ovarian nisus is to determine pain, the second is to increase the habitual mucous secretion, the third is to determine the flow of blood. We have considered the first and third results; the second now demands our attention.

The following statistics of leucorrhœa, in relation to the menstrual function, only deserve the limited credence which can be awarded to information founded on the assertions of patients. In some of the cases the discharge may have been caused by inflammatory affections of the womb, or the vagina; but, upon the whole, we think our researches represent the action of the ovarian nisus on the generative mucous surface.

First menstruation was preceded by an increased amount of vaginal secretion in 85 cases out of 250.

Similar results have been obtained by other observers. Thus, Dr. Blatin found it in 15 women out of 139, or in 1-9th of cases
Marc Despine in . 26 " " 53, " $\frac{1}{2}$ "
B. de Boismont in . . . . . . $\frac{1}{4}$ "

This increased mucous discharge generally lasted from one to six months, and often longer, in women with flaxen hair, blue eyes, pale skin, and other attributes of a lymphatic temperament. Thus, B. de Boismont found that in thirty-one lymphatic women subject to leucorrhœa previous to menstruation, the mean average of first menstrua-

tion was nineteen years four months instead of fourteen years. These results are confirmed by our own unpublished statistics.

This has been spoken of as arising from the influence of leucorrhœa in retarding menstruation by those who, taking a partial view of the phenomena, did not observe that it was of itself a critical discharge of an ovarian nisus, insufficient to cause a discharge of blood. The mucous critical discharge, however, is less effectual than the sanguineous, and only relieves without entirely removing the cerebral and spinal symptoms.

Such was the case with eight women in whom a mucous discharge occurred regularly every month for many months before first menstruation, and in the case of F. D., who first menstruated at ten. From ten to seventeen years she had a copious mucous discharge from the vagina almost every month; at seventeen she became regular. Such cases have been described by old authors under the name of *menstrua alba*, or *palida*, or *menorrhagia alba*, and they may be considered as indicating, not uterine disease, but a morbidly diminished ovarian nisus; for in such women the mucous discharge is replaced by a sanguineous discharge when the powers of vegetative life have been increased by stimulating emotions and tonic medicines.

We have already said that the lymphatic temperament, a delicate constitution, and the inhabiting of large towns, produces an increased amount of vaginal secretion.

The peculiar constitution most liable to this vicarious leucorrhœa, as well as the nature of the treatment required, will be shown by the following case:

Case 31.—Mary Ann N. applied for relief at the Paddington Dispensary, Feb. 13, 1850. She was sixteen years of age, tall, large-boned, with red hair, blue eyes, thick lips, puffy chin, and every appearance of a strongly-marked lymphatic temperament, an inference confirmed by the fact, that when a child she was very subject to glandular swellings. She had lived almost always in London, and first menstruated at fifteen under peculiar circumstances. While nursing a boy for small-pox, she caught the disease, took to her bed, and before the eruption came out the menstrual flow made its appearance in very great abundance, lasting four days. The patient recovered well from the small-pox, and menstruation returned two months after its first appearance. Previous to the first menstrual flow there was no leucorrhœal discharge, but it appeared after the second, and has lasted ever since, sometimes in a slight degree, at others being very abundant, but always painless, and of an inoffensive quality. During the last year, in the place of the sanguineous flow an abundant yellow discharge came on regularly every month, lasting from three to eight days, and was accompanied by pains exactly similar to those felt during menstruation.

About the time of the second appearance of menstruation—whether before or after she cannot remember—there appeared on the elbow a large patch of eczema, which disappeared, to reappear abundantly on her legs and thighs, without ascending higher. This skin affection was in general indolent, except during the spring and sum-

mer, when it became endowed with great activity—lately the scalp having become affected, she has had her head shaved to relieve the intense feelings of heat and itching, which were often intolerable. The digestive functions were in a state of perfectly good order.

After purging the patient, we put her on a course of steel and tonics, ordering a tepid bath every week. When the next menstrual period came on the discharge was sanguineous, instead of mucous, and afterwards became regular, returning every three weeks with pain, being always preceded for two or three days by a white discharge.

On March 3rd, 1851, she consulted us for some large patches of eczema on the head, and we then learned that since the last application for relief menstruation had continued regular, but that lately the leucorrhœa had been abundant, and was always more so when the secretion from the diseased portions of the skin was diminished. In such a case it would have been just as absurd to employ astringents or caustics to the vaginal surface, as to smear the mucous membranes of the nostrils with nitrate of silver to cure a constitutional tendency to cold in the head.

In another case, where there was no leucorrhœa at intermenstrual periods, but in which the menstrual pains had no other relief than an abundant leucorrhœal discharge, the patient, of her own accord, stopped this flow by injections of cold aluminous water. The attendant pains were more severe, particularly that habitually experienced at menstrual times in the left ovarian region.

Contiguous leucorrhœa, or an increased amount of mucous discharge from the vagina, before and after each menstrual epoch, is the rule: For in 200 cases an increased amount of mucous secre-

tion preceded and followed it in	. . . . .	160 cases
" " " "	preceded only in	2 "
" " " "	followed only in	4 "

We have observed that those women in whom a leucorrhœal discharge preceded first menstruation were most liable to contiguous leucorrhœa.

Leucorrhœa may be *intermediate*, or appear between two menstrual epochs. This is a very frequent occurrence in women, subject to the weakening influence of civilisation, for we find it occur in 20 out of 94 cases, and, as it is attended by no pain, it is merely suggestive only of greater cleanliness, and not of treatment. Some of the cases in which we have seen this persist with the greatest obstinacy through life, without in any way interfering with the patient's health, were in strong plethoric women—a remark coinciding with Friend's experience, although somewhat contrary to the dictum of theory, or to received opinions. The just view of such cases, in the nineteenth century, is that entertained by the first medical authority after the divine old man, Hippocrates; by Galen, who called this disease a rheum of the womb, the slight hypersecretion of the vaginal mucous surface having no more alarming import than that of the mucous membrane which lines the nostrils; and to this slight affection should the term *leucorrhœa* be given.

When, however, the discharge, instead of being white and unac-

companied by pain, is yellow or green, and attended by much pain in the back and thighs, and if it has been allowed to continue long enough seriously to disturb the functions of the intestinal surface, the case alters, for, in addition to the constitutional employment of steel, iodine, or mercury, local applications may then be necessary—a fact only to be determined by an accurate examination.

Of 260 women in whom the menstrual function had ceased, 143 had never been subject to leucorrhœa; of the remaining 117,

The vaginal secretion was increased at cessation in	77	cases
It was diminished in	24	„
It remained stationary in	16	„

As previous to first menstruation, so after its cessation, the diminution of the ovarian nisus may be thus indicated by the substitution of a periodical mucous discharge for one of blood. In one case this occurred regularly every month for a year, for eighteen months in another, in a third for two years.

Thus the natural history of woman shows the frequency of the increased mucous discharge from the generative intestine. Pouchet has proved that the mucous discharge is an inseparable portion of the phenomena of menstruation; and the motto of this chapter indicates that the phenomena rest on an anatomical basis. It seems to us that such results are peculiarly interesting at the present time, when those who are without experience in uterine pathology are placed between two extreme opinions; for while, on the one hand, they are told that, "in nineteen cases out of twenty, when a woman seeks professional advice for leucorrhœa, she will be found on examination to be suffering from some inflammatory disease of the uterine region," they are informed, on the other, that uterine ulceration seldom or ever exists: those who judge for themselves will find that truth lies between the two extremes.

With respect to the nature of the mucous discharges of the generative intestine, we quote from Dr. Tyler Smith and Mr. Whitehead, by whom they have been best described:

"The normal mucus secreted by the glandular portion of the cervix is extremely viscid and almost transparent. It adheres to the crypts and rugæ so as to fill the canal of the cervix. It consists chiefly of mucous corpuscles, caudate corpuscles, minute oil globules, and occasionally dentated epithelium, all entangled in a thick tenacious plasma. The tenacity of the plasma is so great that the mucous corpuscles and epithelial debris are arranged in strings within the fluid, and even individual corpuscles may be elongated by pressure upon the plasma, under the microscope. The mucus found at the lowest part of the canal of the cervix is thinner than that belonging to the glandular portion of the cervix, a circumstance which may perhaps be owing to the secretory action of the large number of villi within the margin of the os.

"The mucus found in the upper part of the vagina, as the proper vaginal secretion, is no doubt chiefly secreted by the villi and epithelium of the upper extremity of the vagina and of the os uteri and external portion of the cervix.

"The vaginal mucus, as first secreted, is pearly and semi-transpa-

rent, containing numerous curdy particles, which, when they accumulate to any considerable amount, give it a creamy appearance. Examined microscopically, the mucus of this situation possesses nearly the same characters as the mucus of the cervical canal, except that it contains larger quantities of squamous epithelium and epithelial debris. The only other essential difference is that the first is in the normal state invariably *acid*, while the second is always *alkaline*. It is to this chemical difference, and not to the preponderance of epithelium or mucous corpuscles, that we must look for the cause of the different outward appearances presented by vaginal and uterine mucus.

"Mr. Whitehead, of Manchester, in his work on 'Abortion and Sterility,' made the observation that the mucus of the vagina always possesses acid qualities, and that the discharges from the interior of the uterus are as constantly alkaline. This point I have verified by numerous trials. In the ordinary state I find, moreover, that the secretion not only of the vagina but of the os and external surface of the cervix is acid, while it becomes alkaline within the labia uteri. If a piece of litmus paper be applied to the surface of the os uteri, it is instantly reddened, but the blue colour is restored by passing it within the cervix. The margin of the cervical canal, and the limits of the villi covered by squamous epithelium, and the commencement of the villi covered by dentated epithelium, seem to mark the division between the acid and alkaline secretion. It is to the alkali that the secretion within the cervix owes its viscidity and transparency, while the curdled appearance of the vaginal mucus is owing to the presence of the vaginal acid. The acid of the vagina is quite sufficient to more than neutralise a moderate quantity of the alkaline secretion of the cervix, and when any secretion from the cervical canal enters the vagina, it becomes curdled from the coagulation of its albumen. The same thing may be imitated out of the body. On the addition of a little weak acetic acid, the thick viscid mucus of the cervix becomes after a time changed into the curdy mucus of the vagina. This fact is important; for in common with many other writers, Mr. Whitehead thinks a profuse secretion of the uterine mucus 'extremely rare,' whereas, it is remarkably common in leucorrhœa; but the fact has been masked by the circumstance of its becoming altered when it descends into the vagina, so as to resemble the strictly vaginal mucus; and its source has thus been attributed to the vagina instead of to the cervix uteri. Mr. Whitehead is of opinion that the acid mucus of the vagina is intended to prevent the coagulation of the catamenial fluid in this canal; but I believe that in addition to this, the different chemical conditions of the surface of the os uteri, and of the canal of the cervix, play an important part in the pathology of these structures. During the catamenial flow, the acid vaginal mucus probably has the effect attributed to it by Mr. Whitehead, that of preserving the fluidity of the catamenial discharge, a small quantity of this mucus having the effect of preventing its coagulation even out of the body. The immediate effect of the acid mucus upon the secretion of the cervix uteri, is to cause its coagulation in the way already pointed out."

For further details, we refer the reader to Dr. Tyler Smith's paper in the 35th volume of "The Transactions of the Royal Medical and Chirurgical Society," a paper of which the real value is enhanced by many admirable microscopical drawings by Dr. Hassall, with whom we had been previously engaged in a similar inquiry.

THERAPEUTICAL INDICATIONS.

1. When the ailment is slight, and unattended by severe spinal neuralgia, some diaphoretic drinks at night, additional clothing, and the avoidance of cold and damp air, will remove it.

2. When the discharge is considerable, and attended by much pain, a digital examination will intimate, by the increase of temperature and the pain, whether the vagina be acutely inflamed; and it is then desirable to relieve this morbid state by emollient injections, tepid baths, cooling medicines, and repose.

3. Should an increased amount of vaginal discharge and spinal neuralgia persist after the cure or the alleviation of vaginitis, then it is to be supposed that the disease is in the womb itself, and a specular examination becomes necessary, to ascertain whether it depends upon a state of hypersecretion of the numberless mucous follicles lining the internal cavity of the neck of the womb, or upon ulceration of the os uteri, in which case surgical treatment is required. To detail this treatment, it would be necessary to repeat much of what the reader will find fully explained in Dr. H. Bennet's work on "Inflammation of the Womb." We therefore refer the reader to that work, for although we differ from Dr. Bennet on some points, to him is due the credit of having popularised in England those improved methods of treating inflammatory affections of the womb discovered by our illustrious teachers of the Paris faculty of medicine. In a little time professional rivalships will be forgotten, and then it will be recorded that, towards the middle of the nineteenth century, a young man came to London, and, though unsupported by any hospital or school, by his own personal efforts, he taught the profession how to cure diseases of the womb hitherto deemed incurable, and that he so thoroughly succeeded in popularising the improved methods of diagnosis and cure of uterine disease, that, after a few years, those who opposed the views of the French school were obliged, in their practice, to follow what in public they reviled.

CHAPTER XI.

ON THE INTESTINAL MUCOUS DISCHARGES OF MENSTRUATION.

"L'attention a besoin d'être éveillée pour apperçevoir même les choses les plus ordinaires."—DUPUYTREN.

IT will be remembered, that in those morbid functions of vegetative life called fevers, the impelling force frequently diverts, at the same time, a critical discharge from more than one surface of the body. Thus, while the urinary deposits are sometimes *critical*, there may also be a critical diarrhœa, or perspiration; or, in other words, the ganglionic nervous system has the whole vascular system under command, and may cause it to concur more or less for the purpose of expelling what would be injurious. So it is with that form or portion of ganglionic nervous power which we call the ovarian nisus, which, while separating from the generative intestine a muco-sanguineous discharge, often impels the gastro-intestinal surface to an increased exhalation of mucus. The reciprocal influence of the menstrual function on the stomach and intestines is so little known, that the occurrence of constipation, or diarrhœa, during menstruation, had escaped observation until noticed by Dr. Butler Lane; and, when prominently brought forward by ourselves, many midwifery practitioners stated that they had not observed it. When, however, we reflect that the organs of reproduction, as well as the intestines, are principally animated by the ganglionic nerves, that the spinal nerves of the womb and the intestines arise from the same part of the spinal cord, that the veins of the uterus communicate mediately with the portal system, and that the last portions of both canals are contiguous, these being relieved by the same vessels, and supplied by nerves either derived from the same ganglionic nervous plexuses, or from the same portion of the spinal cord, it is not surprising, that when the uterine discharge is arrested, the nervous energy and the sanguineous current which used thereby to find vent, should deviate to the intestinal surface. Such being the anatomical connexions of the intestinal and reproductive organs, we are prepared to inquire into the nature of the influence of one upon the other.

The reproductive system, during its recurring periods of activity, and likewise before puberty, and after cessation, interferes with the

functions of the intestinal surface. If we first consider what occurs at each menstrual period, it will be remembered that many women are at that time troubled with indigestion, flatulency, acidity, that the tongue is furred, the breath fœtid. Nausea is also of frequent occurrence, and it is sometimes relieved by vomiting acid mucus.

E. A. was always dreadfully sick the day before menstruation; with M. H. the sickness lasted three days; with B. S. eight, ceasing when the flow appeared; with F. N. the sickness lasted eight days before, and until the second day of the flow. In all these cases nothing was brought up but mucus; whereas in J. B., a chlorotic widow of twenty-eight, menstruation was regular but scanty, accompanied by epigastric pain, and followed by two days of vomiting, bile being brought up. These symptoms occur generally in the first part of the monthly crisis, and when carried to a great extent, and prolonged beyond the usual time, chlorosis, in one of its numerous forms, almost inevitably follows. Flatulency, vomiting, and fancies after unusual articles of food, were noticed by B. de Boismont in 64 out of 360 cases.

The same gastric symptoms, only greatly exaggerated, frequently constitute the prodromata of first menstruation, lasting for a long time, and often seems to be the means of bringing about the chlorotic deterioration of the blood. The same gastric symptoms, carried to an extreme, constitute a large portion of the sufferings of women at the cessation of menstruation. Dr. Butler Lane has justly remarked:

"Nothing can be more common than to find severe biliary derangement occurring at or about the period of menstrual secession; and looking at the great physiological change which then takes place in connexion with hepatic development, it is naturally to be expected. A woman will complain of being bilious—viz., there may be a bitter, oily taste in the mouth, a sensation of burning in the throat, frontal headache, nausea, and even vomiting, the urine highly coloured, the bile abounding in the alvine dejections, and perhaps causing a heat and a stinging sensation in the rectum, the tongue furred, a biliary tinge pervading the cutaneous surface," &c. &c.

G. N. had never been troubled with bile, but since cessation she has had repeated attacks of jaundice. P. K. is a strongly-built woman, of a sanguine temperament. The menstrual flow has been dodging her for the last eight months. Up to that time she had enjoyed good health, but since, in spite of purgatives, alteratives, and tonics, we have not been able to set right the gastro-intestinal functions, or to improve the appearance of the tongue, which is permanently coated with a yellow fur.

The ovarian nisus frequently determines diarrhœa, or constipation, or both, at different periods of the menstrual function. The following table will show at a glance how the bowels are acted on by the menstrual function:

TABLE VIII.

STATE OF THE BOWELS DURING HEALTHY MENSTRUATION.

	Nature of Intestinal Disturbances.	Number of Observations.
Bowels relaxed.	Before the menstrual flow	112
	During the menstrual flow	173
	Before and during the menstrual flow .	19
	Before and after the menstrual flow . .	22
	After the menstrual flow	4
	Relaxed before, but confined at the menstrual flow	46—376
Bowels confined.	Before the menstrual flow	6
	During the menstrual flow	171
	After the menstrual flow	1
	Before and after the menstrual flow . .	2
	Before and during the menstrual flow .	5—181
Bowels undisturbed.	Regular as usual	192
	Confined as usual	2
	Relaxed as usual	3—197
	Total	754

From this it appears, that while the bowels remained undisturbed in 197, their functions were modified during the menstrual function in 557 women. We must also remark, that when diarrhœa preceded the menstrual flow, the action of the bowels was generally suspended during menstruation until the cessation of the catamenial period. Our researches have been confirmed by Dr. J. Vandeen, of Zwolle, Holland—*Presse Méd. of Brussels*, No. 36—who there advanced "as a fact hitherto unnoticed, that while after parturition constipation was the rule, diarrhœa was of frequent occurrence during menstruation." It would be nearer the truth to say that menstruation and parturition so far resemble each other, that diarrhœa frequently occurs at the beginning, and constipation towards the end of both functions.

Diarrhœa is in general unattended by pain, and consists in the daily passing of three or more motions, rendered loose by an increased secretion of mucus. When the stools are much altered in appearance during the monthly crisis, it generally indicates idiopathic disturbance of the intestinal functions. In chlorosis, habitual constipation frequently coincides with the menstrual periods, and in some of the worst cases of that disease mucous diarrhœa may occur instead of the menstrual flow. Thus, Jane B., now twenty-seven, and chlorotic, first menstruated at fourteen, always irregularly, mostly every seventh week. Sometimes, when she thought the menstrual discharge at hand, she would pass eight or ten liquid motions per day for four or five days, and this would relieve both the spinal pains and the pseudo-narcotism. In other cases the alvine evacuations are often dark, and

offensive to the smell, looking like tar, or like decomposed animal matter.

We drew attention to leucorrhœa being in some rare cases substituted for the sanguineous discharge, and in still rarer instances is diarrhœa occasionally substituted. Thus, Baudeloque—*Art des Accouchements*, Tom. i., p. 185—has recorded the case of a woman, then forty-eight, who, since the age of fifteen, had every month, for four or five days, three or four motions every day instead of menstruating.

As a precursory symptom of first menstruation, diarrhœa seldom occurs. We have noted it but three times in 349 cases. This contrasts with the frequency of gastric symptoms at the same period of life.

As a symptom of cessation we have noticed diarrhœa in 12 per cent. of our cases. It occurred irregularly in 8 per cent., but in 4 per cent. it was vicarious of menstruation, and occurred every month, as is the case more frequently with leucorrhœa after cessation.

We have met with a case where there had never been any premonitory diarrhœa; nevertheless, the cessation of menstruation was for five years followed by an habitual looseness of bowels, occurring two or three times a day, generally without colics. The patient enjoyed good health during that time, and is now a stout and tolerably healthy woman.

At or after cessation the motions are frequently bilious, and scald the passage; but they may be different. Thus, Dr. Day notices the salutary effects of diarrhœa, consisting of watery evacuations, taking place without apparent cause every three or four months after the cessation of menstruation; and he alludes to a lady eighty-seven years of age, in whom for the last thirty years this had occurred with great advantage. As a general rule, however, when diarrhœa has habitually accompanied menstruation, there is at the change of life a gradual diminution of both discharges, the cessation of the one marking the termination of the other.

Connexion has been known to cause the involuntary expulsion of fœces.

Diarrhœa not unfrequently occurs without apparent cause during pregnancy, and if allowed to proceed it may bring on abortion; although in one case we have known loose motions to be passed twenty times a day during pregnancy without the mother losing flesh, or the child being born before the full time.

Diarrhœa is the usual effect of labour, while constipation generally follows parturition, the meddlesome interference with which in this country by purgatives is still productive of much mischief.

With respect to the frequency of diarrhœa during ovarian and uterine diseases, we may state that in general, whenever there is a great increase of uterine activity, a tendency to diarrhœa may be expected. Dr. B. Lane states, that in about half his cases wherein diarrhœa occurred during menstruation, dysmenorrhœa also existed. Dr. Rigby makes a somewhat similar statement respecting the majority of the cases of dysmenorrhœa he has met with; and we have several times

seen diarrhœa occur in cases of menorrhagia, both flows progressing and abating together.

Dr. H. Bennet, judging from several remarkable cases, has concluded that diarrhœa often coexists with inflammation of the neck of the womb; and expects the one when the other is present. Out of twenty cases of uterine tumours, Dr. B. Lane found that the bowels were unaffected in four instances; constipated in two; relaxed in fourteen. We cannot, however, consider diarrhœa a constant attendant on uterine inflammation; for, in uterine disease there is often constipation, which sometimes depends on a want of power to expel the fæculent matter, as if by a kind of paralysis of the rectum, and sometimes upon the constriction of that portion of the intestine —a mechanical effect of its pressure by the retroverted womb. Dr. Tunstall, of Bath, has also noticed the frequency of constipation as an accompaniment of chronic ovarian disease, and thinks that constipation is to be regarded as the rule, in those diseases of the ovario-uterine organs characterised by deficient action; for, as the presence of the menstrual nisus is as much felt by the intestines in their particular way as by the womb, so, when the womb is deprived of its critical discharge, the intestines are likewise deprived of theirs, as Friend had already stated.

The obstinacy of constipation in chlorosis led many practitioners to rely principally upon purgatives, long before Dr. Hamilton, of Edinburgh, made them his sole means of treatment. Those cases are indeed exceptional, where serous discharges last long in anæmic women, in whom menstruation has long been suppressed. This circumstance, as well as the state of the skin, lead one to suspect this serous diarrhœa to be caused by enteritis, often depending on a tuberculous diathesis.

This fact being established, it is useful to seek to account for it by our knowledge of the laws by which it may be governed. Formerly it would have been deemed a sufficient explanation to say that it was the result of sympathy, or that it was caused by the transmission of irritation from the generative to the intestinal apparatus; but the light which Dr. Marshall Hall has thrown on the physiology of the nervous system enables us to refer the phenomena to reflex action; for if the abdominal and not the respiratory organs are frequently implicated by uterine disturbance, it may depend on the fact that the nerves which surround the womb and the intestinal organs arise from the same part of the spinal cord, while those going to the respiratory and circulating system, arising from a much higher portion of the spinal marrow, are not implicated in uterine disturbance.

We do not, however, think that any other explanation is required than that already found sufficient to explain so many other symptoms of menstruation. An ovarian nisus which has been able to disturb the functions of the brain and spinal cord may certainly disturb the functions of the gastro-intestinal surface, since, as well as the generative intestine, it is endowed with ganglionic nerves. A neural current impels the blood outwardly from the womb; but before this current

effectually succeeds in doing so, the same, or at least a parallel nervous current has determined a similar outward flow of mucous secretions from the intestines, in more than fifty per cent. of the women we have questioned; and, in practice, we often imitate nature with great advantage, and hasten the uterine by accelerating the intestinal discharge.

Dr. B. Lane has sought to explain the intestinal disturbance during menstruation, by admitting a certain balance to exist between the biliary and the uterine secretions, and he says:

" I am therefore inclined to believe that constipation, to a greater or less extent, most commonly coincides with menstruation when the uterus is in a healthy condition, its function exerting a derivative influence in reference to the liver. On the other hand, if congestion of the liver be consentaneous with the period of uterine congestion, spontaneous biliary secretion, simultaneous with the menstrual flow, may afford relief; but if there be a still higher degree of hepatic congestion, it may occasion mucous diarrhœa, as it is known to do on other occasions, and that more especially if the irritative influence of dysmenorrhœa be present. Such I believe to be causes of diarrhœa during menstruation, and, as a general rule, I consider it indicative of a morbid tendency."

Sir C. M. Clarke had already noticed that in some women a deficiency of bile and a constipated habit of the bowels coincided with an increased monthly flow at protracted intervals, and with feelings of giddiness, sleepiness, pain in the head, indistinct vision, a waving appearance when the eyes are open, and a sensation of specks when they are closed. These symptoms are relieved by a spontaneous bleeding of the nose, or by menstruation.

With respect to the intestinal disturbance occurring at the cessation of menstruation, and through life, as a concomitant of chlorosis, suppressed menstruation, and uterine inflammation; we think it may fairly be attributed to undue activity of the biliary apparatus, determined by a disturbance of that balance between the biliary and the reproductive organs which is founded on vascular as well as on nervous association.

The menstrual flow removes from the system a certain amount of carbon; and when the menstrual flow is not stopped by some complementary function, such as pregnancy, or lactation, this carbon remains to be disposed of, and is generally removed by the biliary and intestinal surfaces, or by the cutaneous, in the shape of sweats. This removal of carbon from the system by the menstrual flow has been shown by the interesting experiments of Andral and Gavarret. These accurate observers found that as in the male so in the female, from eight years of age to puberty, there was an augmentation in the quantity of carbonic acid gas excreted by the lungs; but as soon as ever menstruation takes place, women continue to excrete the same quantity of carbonic acid as before, while in man the quantity goes on increasing.

From experiments made on twenty women, it appears that during the whole of the time comprised between the first and last men-

struation, the strongest and healthiest only excrete per hour a quantity of carbonic acid representing gr. 6.4, or the same quantity as before puberty; while men consumed gr. 7.4 per hour before their fifteenth year, and gr. 11.3 per hour from fifteen to forty years of age.

After cessation of the flow, the lungs more largely secrete carbonic acid; for in women aged from thirty-eight to forty-nine, and who had ceased to menstruate, the quantity of carbon consumed by them per hour has been shown to arise from gr. 6.4 to gr. 8.4. But the balance between the respiratory and the menstrual function is even more forcibly shown by the fact that, at whatever period of life, whenever menstruation is diminished or suppressed, more carbon is consumed per hour by the lungs, and less when the menstrual flow has been re-established.

This circumstance evidently explains the influence of suppressed menstruation on the production of consumption, and shows that by re-establishing the menstrual flow we do *really* take a load from the lungs, in which incipient tubercles are deposited.

This explains to a certain extent the benefits derived by Dr. Burslem from the re-establishment of menstruation in the first stage of consumption. It is interesting to notice, that if the quantity of carbon consumed by the lungs is less during menstruation, it is less also in both sexes in hot climates, where, though biliary affections abound, consumption is scarce.

The lower portion of the intestine is sometimes subject to congestion and loss of blood. In women this is generally the result of pregnancy, and is, to a great extent, a mechanical effect; but, when produced, the hemorrhoidal affection is often influenced by the ovarian nisus, the pain, congestion, and loss of blood from the rectum being then increased. Thus, in N. A., the menstrual flow is always preceded by the appearance of hemorrhoidal lumps for two days. With E. G. the hemorrhoidal tumours always bleed more after each menstrual epoch, and for the last few months, having lost more blood by piles, there has been less menstrual flow. With M. A. P. there has been much vaginal discharge since she has been subject to hemorrhoids.

It is not difficult to understand why pelvic plethora at the cessation of menstruation should often seek to find a vent on the surface of the uterus; and accordingly it has been found that

Hemorrhoids existed to various extents in . .	20	per cent.
They appeared for the first time after cessation in .	12	„
„ did not bleed in	4	„
„ were bleeding in	8	„
„ were considerably increased after cessation in .	4	„
„ remained the same in	2	„
„ diminished at cessation in	2	„
Intestinal hemorrhage existed in	2	„

With respect to the reasons why the hemorrhoidal state should in-

fluence the lower part of the generative intestine, Sir C. M. Clarke observes, that a discharge of mucus from the vagina is a concomitant symptom of piles; for the internal iliac artery supplies both the hemorrhoidal vessels and those which supply the vagina with blood, and it will be found difficult to restrain this discharge while the hemorrhoidal tumours continue. The labia and the nymphæ are also apt to be more swollen from the vessels being distended.

THERAPEUTICAL INDICATIONS.

Our acquaintance with the very intimate organic relations existing between the generative and intestinal mucous surfaces gives us the key of much empirical practice; and will therefore enable us to act in future with that full confidence only to be obtained from knowledge. It explains how we ought to seek by gentle purgatives, as well as by many other means, to promote the first appearance of menstruation when its necessity is self-evident to the medical observer; how the same plan should be adopted when menstruation is accidentally suppressed, as in chlorosis; and still more how, at the cessation of menstruation, the biliary apparatus should be systematically relieved from the excess of blood then thrown upon it, by the long-continued action of gentle purgatives. It likewise shows the dangers of purgatives when too powerful, or when given during the period of menstruation. A change of type from the normal to the morbid, or the suppression of the menses, may then be anticipated; while drastics at cessation tend to prolong what nature has determined to discontinue.

Such are the therapeutical indications suggested by this symptom of menstruation and its various morbid metamorphoses. The therapeutical agents to be employed must depend upon the patient's idiosyncrasy.

During the prodromata of menstruation warm purgatives are required. The myrrh and aloes pill is good; and we frequently prescribe the soap and aloes pill of the Pharmacopœia, ordering five or ten grains to be taken with the first mouthful of food at dinner. The tendency of aloes to cause hemorrhoidal affections, is a reason for giving it when we want to stimulate that part of the generative intestine which is in the immediate vicinity of the rectum.

When menstruation is irregular and painful, we have great faith in sulphur given regularly every night. We think it acts as favourably on the capillaries of the womb as it does on those of the rectum.

When giving purgatives at cessation, we must bear in mind that the menstrual flow sometimes ceases by a gradual diminution of the quantity of the secretion and the time it occupies; sometimes by a series of irregularities in the quantity, quality, and epochs of its appearance; sometimes by a terminal flooding. Although nature occasionally chooses this last termination, we have no right to risk the possible dangers of its induction by the exhibition of purgatives energetic in their action. It is injudicious to give purgatives just before the menstrual epoch; for they might increase the

flow which nature seeks to diminish; and it is more prudent to prescribe the frequent use of the milder opening medicines, which may diminish by degrees the plethora of the abdominal viscera.

In some women after cessation the stock of vital productivity is fairly exhausted, and purgatives are not absolutely required; but in most there is a superabundant nervous energy and a superabundance of blood; for that supply, which was formerly sufficient for the maintenance of both mother and offspring, can thenceforth only be expended on the woman's frame, in which the circulating system tends to assimilate to that of man.

This superabundance of blood and nervous energy may, after cessation, be often kept under by the frequent use of purgatives in small doses; the intention being not to bring on a return of the menstrual discharge, but to diminish abdominal plethora, and the necessity for that plethora seeking a less manageable safety-valve; and as it may be many months before the constitution can settle down, it would be advisable to consult the patient as to what medicine she has best tolerated.

The nature of the purgative varies. Saline mineral waters are excellent, and when it is inconvenient to seek relief in this manner we generally give the flower of sulphur, either alone, or to each ounce of it we add a drachm of sesquicarbonate or biborate of soda, and sometimes from twenty to forty grains of ipecacuanha powder. One to two scruples of these powders, taken at night in a little milk, is generally sufficient to act mildly on the bowels, and such combinations are very valuable when a continued action is required. Notwithstanding the contrary prejudice, we have seldom found sulphur give any unpleasant smell to the skin. It is generally classed among purgative remedies because such is its visible action, but it owes its chief value, in diseases of cessation, to another action, much more difficult to understand, and which has long rendered it so valuable both in hemorrhoidal affections, where there is an undue activity of the intestinal capillaries, and in skin diseases marked by a morbid activity of the cutaneous capillaries. Whether sulphur cures by acting on the nerves or on the blood-vessels, or by modifying the composition of the blood itself, is difficult to tell, but it does certainly cure the diseases enumerated. It forms part of many popular remedies for the infirmities of old age, and is lauded by Dr. Day in his work "On the Diseases of Old Age."

Kemp and Hufeland recommend the following powder to be given to those who are advanced in years, and who complain of a tendency to vertigo; Guaiacum resin, cream of tartar, of each half a drachm, to be taken at night. This, no doubt, will sometimes be found a useful laxative; so will the popular remedy called the Chelsea Pensioner, of which Dr. Paris has given the following formula: Of guaiacum resin, one drachm; of powdered rhubarb, two drachms; of cream of tartar and of flowers of sulphur, an ounce of each; one nutmeg finely powdered, and the whole made into an electuary with one pound of clarified honey; a large spoonful to be taken at night.

CHAPTER XII.

INFLUENCE OF THE OVARIAN NISUS ON THE CUTANEOUS AND ON THE URINARY SURFACES.

> "Non sunt contemnenda quasi parva, sine quibus magna constare non possunt."

THE lesser manifestations of any force are as deserving of notice as those which more strongly express its nature; and if the influence of the ovarian nisus on the skin is so slight as to pass unobserved at many stages of the function, at its cessation this influence becomes the paramount symptom. We know little respecting the functions of the skin. The composition of the fluids it exhales is so little ascertained, that a French chemist, lately operating upon 28lbs. of perspiration, has detected the existence of a peculiar acid, which he calls *hydrotique*, and affirms that it passes through the skin in combination with soda and potash. The chemical differences of perspiration in health, and in the various forms of disease, have scarcely been investigated, although the research might solve some pathological problem, and suggest therapeutical measures. At present we know nothing beyond the facts of the extreme importance of a free cutaneous exhalation, of its quantity being to a certain extent in inverse ratio to the urine, and of its partial or complete suppression being that of the most frequent cause of disease. With respect to the influence of the reproductive organs on the cutaneous surface, in many women each menstrual crisis is shown by the dark encircled eye, and by some alteration of the usual complexion. In those who are fair, the skin of the face becomes muddy or pale; in brunettes it is often patched with red, yellow, and green; and where menstruation is irregular, it may be suffused with heats, flushes, and perspirations. At p. 62 we have already drawn attention to the frequency and mechanism of the flushes of heat, and we must now notice the perspirations by which they are often critically relieved. In delicate or chlorotic patients, when menstruation is suppressed or deranged, these symptoms do not generally exist. They are, however, frequently observable in women otherwise constituted, and often become intolerable at the cessation of menstruation. Thus, at that epoch,

The heats and flushes were noticed in	38 per cent.
Gentle perspirations in	30 ,,
Drenching sweats in	16 ,,

These symptoms are so evidently the means employed by the ganglionic system to divert from the generative intestine the blood periodically impelled to it by the ovarian nisus, that not only do they become distressing at the demise of the ovarian nisus, but during the physiological subsidence of its usual mode of action, during pregnancy, and during lactation. We have already alluded to the increase of animal heat during pregnancy and lactation, not only proved by heats and flushes, but also by the inability to bear the usual amount of clothing. These flushes of heat are not unfrequently accompanied during pregnancy by perspirations, and during lactation the sweats are often as drenching as at cessation.

These symptoms, little dwelt upon by pathologists, derive great importance from their frequency, and also from the insight they afford into the means by which nature relieves the system of the fluids that are no longer every month discharged; for when the periodical secretions from the uterine and the intestinal surfaces are checked, it seems as if the mass of fluids were often thrown on to the extensive surface of the skin, which is so frequently found to stand in antagonistic relation; thence arise the heats, the flushes, and gentle perspirations, by which, in the generality of cases, further mischief is prevented. It is not surprising that it should be so, and long ago Sanctorius established, that "Insensible perspiration alone discharges much more than all the sensible evacuations put together."—Sec. I., Aph. iv.

It will be remarked, however, that in 16 per cent. the cutaneous exhalation, by its amount, became itself a disease, without relieving the patients so much as the more moderate exhalation; and this would not be understood were it not for the uncontradicted statements of the same accurate observer: "That perspiration which is beneficial, and most clears the body of superfluous matter, is not what goes off with sweat, but that insensible steam or vapour which in winter time exhales to about the quantity of fifty ounces in the space of one natural day."—Sec. I., Aph. xxi. "Sweat is always from some violent cause; and as such—as static experiments demonstrate—it hinders the insensible exhalation of the digested perspirable matter." —Sec. V., Aph. iii.

The drenching perspirations seldom last very long, but the heats, the flushes, and the gentle perspirations, often appear several times a day for ten or sixteen years after the cessation of menstruation. The salutary effects to be derived from this agency, the value of which have not been duly considered, have been exemplified in the case of J. A., p. 103. These perspirations are not always general, and are in some confined to the upper part of the body.

E. W. is now fifty. The menstrual flow has been very irregular and painful for the last eighteen months, and she has of her own accord adopted flannel next her skin, on account of a local perspiration

at the pit of the stomach so abundant that it saturates all the clothes covering that part of the body.

E. T. and two other patients have been much troubled with congestion of the nose, which feels " burning and aching," as it does sometimes previous to epistaxis.

In two women we have seen an abundant eruption, similar to that of purpura, on the feet and legs; in one it faded when the menstrual flow was established, in the other case the eruption came instead of the menstrual discharge.

Sometimes the face is not only congested under the influence of the menstrual function, but presents some cutaneous eruption. B. de Boismont has observed vesicles and pustules on the nose or chin, or on the pudenda, as symptoms of the menstrual crisis.

Bordeu mentions the case of a lady whose face was attacked with erysipelas at each menstrual period. We are now attending a lady in whom the menstrual flow had been deficient for the last few months, and at each menstrual period her ears and their vicinity became covered with eczema. This has ceased to occur since the menstrual function has been set right. The following case exemplifies the influence of the ovarian nisus on the skin:

Case 32.—Oct. 1, 1851, we were consulted by Miss A. M., aged twenty-four, of middling stature, delicate looking, with brown hair and grey eyes. After twelve months prodromata, consisting of frequent bleeding from the nose and violent pain at the pit of the stomach, she first menstruated at fifteen, and the flow *usually* took place every fourth week, and lasted four days. When it missed, there was great increase in the epigastric pain. She had been more regular for the last three years, but the flow was less abundant, and accompanied by more than usual pain, and by swelling of the breasts.

About two years previous, three days after menstruating as usual, as she was kneeling down before the fire, she felt a numbness in the left thigh and leg; convulsions followed, and she became unconscious. On recovering, she shortly after experienced a slighter attack of the same nature, and for the year following there was no epigastric pain, but it returned last Christmas, just before menstruation, and has lasted ever since. She calls it an anxious, distressing pain, and says that it is sometimes relieved by pressure. It makes her feel faint, and is accompanied by heats, flushes, and a sense of choking in the throat. There is flatulency, nausea, and sometimes sickness; but the tongue is clean, the bowels regular, and no bile ejected by vomiting. For this strange affection many persons had been consulted, but she says without benefit. We ordered the comp. camph. mixture, aloes and myrrh pills, with carbonate of soda in water after meals, and an opium plaster to the pit of the stomach.

The patient got better under this treatment, and was restored to health by the use of Bullock's syrup of citrate of iron and quinine; but so soon as the menstrual function was restored to order, and the general health improved, the nose and cheeks became covered with an abundant crop of pustules of *acné punctata.* These appeared first at a menstrual period, but remained for several months, always becoming

worse at the menstrual epochs. We sent her to Mr. Startin, who cured the cutaneous eruption.

If cutaneous eruptions very seldom owe their origin to the menstrual function, during the period of its full performance, they are of frequent occurrence during the prodroma of first menstruation, and until it is regularly established. Those who attend large girls' schools know how frequently *acné* and other skin diseases appear on the face, the back, and shoulders during that time, and how quickly they disappear when menstruation has become regular.

Baron Alibert related to us that he had observed some cutaneous eruptions to appear twice only in life—once before first menstruation, and once at its cessation. In our own practice, we have twice seen these epochs preceded by an abundant eruption of boils.

CASE 33.—Maria B., aged fifty, first menstruated between her eighteenth and nineteenth years with little previous disturbance, and continued regular until twenty years of age, when she married. She has had nine children, the last when forty-four years of age. At forty-eight, she had several floodings, but without much increase of pains in the head. The catamenia ceased at forty-nine; this was followed by no disturbance of health, except by a severe attack of nettle-rash, three months after, on the chest and body, which disappeared on the proper medicines being administered; twice, however, it has recurred at irregular periods, and on the 28th of March last, she applied for relief at the Farringdon Dispensary, for a fourth well-marked attack of the disease on the lower part of the body and thighs.

As this patient had never before had the slightest rash, and as this nettle-rash has appeared four times in the year which has elapsed since cessation, we believe it to have been caused by this crisis, as in the case cited by Tissot, of erysipelas of the face occurring fifteen times during the two first years after cessation, less frequently during the two next years, and only once during the fifth year. These are, however, rare instances, and, generally speaking, cessation takes place without any cutaneous eruption.

THERAPEUTICAL INDICATIONS.

1. To relieve the irritability of the nervous system by the sedative preparations already recommended.
2. To relieve the vascular plethora resulting from the subsidence of a periodical flow of blood, by taking from three to four ounces of blood from the arm at successive months.
3. To relieve the skin itself by tepid baths.
4. To direct to the kidneys the saline matters which are otherwise removed by perspiration.

Further information and details respecting the use of mineral waters, at the change of life, will be found in our work on "The Preservation of the Health of Women at the Critical Periods of Life."

URINARY DEPOSITS DURING MENSTRUATION.

We have repeatedly compared the morbid functions of the gan-

glionic system with its healthy function—fevers with menstruation. Nature gives its warrant to our comparison, for in both fever and menstruation, the critical discharge is frequently met with in the urine.

Our attention was first drawn to the subject by a patient telling us "that she always knew when she was going to be *poorly*, by her urine being so very muddy;" and indeed many women state that their water is generally thick and muddy two or three days previous to menstruation. We have found the sediment to be composed of phosphates. Dr. Rigby has remarked that the urine of dysmenorrhœic patients frequently contains lithates, as it does also in cessation cases; but this inquiry could only be carried out in hospital practice, and is certainly worth doing, for who will not admit with Dr. Holland, that although much light has been thrown on the functions of the kidneys, still the relation of the urine in its quantity and properties to the various changes occurring in other parts of the body, still offer singular difficulties to the physiologist.

The administration of alkalis, so useful an addition to the treatment of such cases, improves digestion, and by their action on the blood they doubtless neutralise some of its noxious elements. Their utility will be still further understood, if it be admitted, that notwithstanding the use of diuretics, the urine previous to, and at cessation, is often secreted in smaller quantity, and deposits abundantly. We often give liquor potassæ or the bicarbonate of soda, now called the sesquicarbonate in the new Pharmacopœia of the College of Physicians, because it is a convenient form of administering it, cheap, and not unpalatable. After the first few days, we give it only once or twice a day.

Thus have we passed in rapid review the many evidences of that species of fermentation admitted to exist at the menstrual periods by Bayle and Etmuller, by De Graaf and Van Helmont, of the peculiar commotion of the blood which Democritus had in view when he talked of a "fervor uterinus," and we have seen that the menstrual flow, far from being a passive discharge, to be accounted for by mechanical causes, must be more than ever considered a critical termination, often preceded by mucous discharges from the generative and intestinal canals, and determined by the complicated nervous phenomena which originates in the ganglionic nervous system.

No one has hitherto attempted to follow out each of the manifestations of the ovarian nisus in all the various phases of a healthy or a morbid action of the reproductive organs; and we hope that our careful sorting and classification of the effects of the reproductive organs on the system, and the philosophical deductions to which they have naturally led, may somewhat tend to raise the standard of obstetric literature to a level of that of many other branches of medical science, and also contribute to the elucidation of many obscure forms of disease. Having shown the physiological and varied morbid action of the ovaries on the system, we are thus prepared to prove how it is influenced by the ovaries when they become inflamed.

CHAPTER XIII.

ON SUB-ACUTE OVARITIS.

Inflammation is more frequently sub-acute than acute.

Syn.—Chronic ovaritis; secondary pelvic inflammation.—Dr. Kennedy. Abdominal inflammation—Menstrual colics—Amenorrhœa—Dysmenorrhée hystéralgique.—Gendrin. Dysmenorrhœa—Menorrhagia—Hysteria.

Def.—Swelling of the ovaria, with increase of heat, and pain upon pressure, accompanied by intermittent or permanent pain or uneasiness in the ovarian region, radiating to the loins and thighs, and producing, according to the constitution of the patient, an arrest of menstruation, or its profuse flow, intense local pain, or hysterical symptoms.

We are not called upon to inquire into the nature of inflammation, and accepting the term as it is usually defined, we submit that in the present state of our knowledge it would be unjustifiable presumption to deny the existence of inflammation, except when proved by purulent or solid deposits. When mucous membranes are inflamed, as in gleet or ophthalmia, the anatomist can often discover nothing but doubtful hyperæmia.

Mr. Simon, in his paper on "Sub-acute Inflammation of the Kidney"—*Transactions of the R. M. and C. Society*—correctly observes, "that what is notoriously true for mucous membranes is no doubt equally so, though less notoriously, in respect to glands. No intestinal effusion of lymph need exist in a gland to warrant us in accounting it inflamed; its inflammation may consist only in functional derangements, and may be recognised by admixing its albuminous products with those of normal secretion; but while a mucous membrane sheds its inflammatory secretions, and gets rid of them, the glands are embarrassed by the retention of these secretions, and thus an irritation, insignificant as it may be, on a mucous membrane in a gland, may serve to originate its complete disorganisation."

Leaving the reader to apply to the ovary Mr. Simon's train of reasoning on sub-acute inflammation of the kidney, we proceed to state

that by *sub-acute* inflammation as distinguished from *acute*, we do not so much imply a difference in the intrinsic nature of the morbid phenomena, as a limitation of the inflammatory action to certain distinct parts of the ovaries, as the ovarian follicle, and to portions of the ovarian tissue so small, that they give rise to little swelling, and to no febrile action; and here we may point out, as a peculiar property of the sexual system in women, the liability to inflammation of very limited portions of the generative apparatus, the others not participating in it—a peculiarity to which the ovary is still more liable, on account of its complex structure.

Sub-acute ovaritis, whether primarily developed as such, or supervening on the acute inflammation of the ovaries, is generally a chronic disease, from the circumstance of the ovaries being subject to a periodical augmentation of nervous and sanguineous excitement. Chronic ovaritis is always sub-acute; and as sub-acute inflammation of the ovaria is often present without being chronic, we have thought it best to adopt an appellation which suits both, and draws attention to the low intensity of the inflammatory process.

It is a general law that acute inflammation of organs is very rare in comparison to the frequency of their sub-acute affections. The kidney does not escape this law, neither does the ovary, although, as we shall see, its sub-acute affections may be unnoticed or confounded with others.

It is evident, however, that in the determination of causes, in the symptoms, and in the treatment of these two diseases, we shall find a great similarity; we shall also find that they may pass the one into the other, the sub-acute being exasperated into the acute, while acute ovaritis sometimes becomes sub-acute or chronic, as it is then generally termed.

We admit two degrees of ovaritis:—1st, the sub-acute; 2nd, acute ovaritis; and, in attempting for the ovaries what has been so felicitously done for other organs, we will endeavour to show that the groups of symptoms associated under the term of amenorrhœa, dysmenorrhœa, menorrhagia, and hysteria, are often the mere symptoms of sub-acute ovaritis.

We stand not alone in this belief. Joseph Frank and Dr. Chester hold the same creed. Clarus distinctly says, that he considers the disorders of menstruation as the symptoms of chronic ovaritis; and Dr. Rigby strenuously advocates the same doctrine.

CHAPTER XIV.

ON THE MORBID ANATOMY OF SUB-ACUTE OVARITIS.

Inflammatory lesions of the skin and mucous membranes frequently leave no traces after death.

If we inquire into the anatomical conditions of the ovaria during ovulation, we find that there is a sanguineous turgescence of these organs, and an appearance of blood vessels on and in the vicinity of the vesicle, which, like a small nodule, protrudes from the ovary. This is followed by a gradual thinning, and progressive absorption, and bursting of the vesicle. This congestion and effort to eliminate a foreign body, and subsequent ulceration and cicatrization, when observed elsewhere are called inflammatory; they attend the natural function of the ovaria; but we must, however, admit that this physiological excitement may easily merge into the pathological condition, called inflammation.

We must also note that during pregnancy the ovaries assume a new mode of existence, as if to prevent the useless fructification of germs; the ovaries swell to double, or more than double, their usual size; the firm stroma becomes so softened that the follicles may often be enucleated. Now all this is normal, and must not be confounded with the inflammatory softenings which we are about to describe.

As with any other organs bounded by a serous membrane, the ovaries and peritoneum may be separately, distinctly, or simultaneously the seats of inflammation. It is so fully admitted that in no part of the body are adhesions, false membranes, and other products of inflammation so frequently found as in that portion of the peritoneum which covers the generative organs of woman, that it is useless to cite authorities. Some authors—Dugès, amongst others—assert that—without exhibiting any false membranes—the peritoneal covering of the ovaries and the Fallopian tubes may still present signs of inflammation; the peritoneum being thicker than usual; the subjacent cellular tissue having lost its transparency, being white, or else exhibiting spotted or striated suffusions, caused by the infiltra-

tion of a thick opaque serosity, of a white, pink, or yellow colour, or else distended with a gelatinous substance.

It would be wrong to infer the previous existence of small abscesses from the cicatrices on the surface of the ovary, for they are not to be distinguished from the physiological ulceration of ovulation, which we have described at p. 31. It must be also borne in mind that after parturition the ovaries are larger, the stroma more pulpy, and that the Graafian vesicles can be enucleated, as Bichat has observed; a condition which, if met with independently of pregnancy, would be considered morbid; whereas it is not so, and is then only to be considered as a predisposing cause to those more serious lesions which so frequently occur at this period.

In sub-acute ovaritis, the ovary itself is slightly increased in size, or to double its usual dimensions, resisting and elastic; on pressure, it yields a sensation of fluctuation; its surface is smooth, polished, and glistening; its tissue more red than natural, though less resisting; congested with blood, as described by Negrier, or moist with a sero-viscous fluid, called spermatic by Bonnet, Lieutaud, and others, in consonance with what was then the name of the ovaria, *testes muliebrum*, and in harmony with the then current opinions of the day. It is traversed by a number of smaller vessels, especially in the neighbourhood of the cells, which, placed at the surface of the organ, contain ovules, and may be healthy or diseased. On being cut open, the substance of the stroma may be somewhat softer than usual, of a redder hue, with blood-dots of interstitial hemorrhage, or with a few pin-head abscesses.

The vesicles have been found presenting *individually* evident signs of all the different stages of inflammation, although surrounded by a perfectly healthy stroma; the parietes of the vesicles highly vascularised, so as to look like red currants, friable, lined with false membranes, or full of well-formed pus—minute, but unerring testimonials of previous inflammation. The proof of their chronic inflammation has still more frequently been observed. They may be hypertrophied, of the size of a pea, or larger, round, or falciform, with an extremely dense white internal membrane, having a polished surface of the thickness of parchment. They may be also found pellucid, having interposed between them and the parenchyma of the gland one or two other distinct membranous layers, with or without intermediate granular matter. They may contain either a green, yellow, or fatty liquid, or a pulpy substance, like the interior of an encephaloid cyst, or even solid saline concretions, as observed by Morgagni.

Duplay relates, as a case of ovarian apoplexy, one in which the ovaries were found studded with blood-clots, and when these are voluminous they may have been confounded with real corpora lutea; and if we correctly understand Dr. Montgomery, he admits that some of the false corpora lutea he has so well described, are the result of slight inflammatory action localised in and about the vesicles; which explanation we adopt. The peculiar function of the organ must be

borne in mind, so as not to consider inflammatory the vesicles which have undergone some enlargement, and then become blighted; their liquid contents being partly absorbed, the follicles are no longer fully distended, but look like wrinkled sacs, of a white or of a grey colour.

Heretofore, the minute lesions of these organs have been neglected because they did not uphold any particular point of doctrine. As the physiology of the ovaria scarcely dates from later than yesterday, we need not be surprised at finding their pathology little advanced. These lesions have been cursorily noticed by embryologists or physiologists studying the ovaries from their own peculiar points of view; but now that attention has been drawn to the importance of morbid ovarian action in many a pathological problem, the numerous ovarian lesions will be studied with the microscope, and other resources now called to his aid by the anatomist, and we shall know more of the morbid anatomy of the ovaries.

We do not, however, suppose that in every case an ovarian swelling capable of being detected in the living body, would always after death present some of the lesions we have described. We know that many conditions of the skin and of the mucous membranes, which are evidently inflammatory, vanish after death—why should not the same occur with sub-acute ovaritis? Lisfranc was convinced that all the morbid appearances of inflammation of the body of the womb might thus disappear after death.

The liability of the Fallopian tubes to chronic as well as acute inflammation is proved by their often presenting undoubted traces of its having existed. In recording these lesions, and ascribing to them their due value, we must not, however, forget that the ovaries may be partially, and even seriously inflamed, without the power to perform their proper functions being permanently compromised. Do we not see the substance of the lung recover from the solid state, and again become permeable to air when the patient is cured of acute pneumonia?

CHAPTER XV.

CAUSES OF SUB-ACUTE OVARITIS.

> "How frequently have authors noticed the numerous morbid lesions of the ovaries! But of what avails such information, if they do not describe their causes."
> KRÜGER.

WE shall investigate, at considerable length, the causes of sub-acute ovaritis, so as to preclude the necessity of recurring to them again when describing the acute form. The causes of both diseases are the same, different effects being produced by the difference of their intensity, and the variety of their combinations; besides, as the ovaries give to woman all her female attributes, by an acquaintance with the causes of ovaritis, we become acquainted with those of the diseases of women in general. The causes of sub-acute ovaritis are, like those of other diseases, predisposing and exciting.

The principal predisposing cause is to be found in the nature and functions of the genital organs; for although in woman the ovary is, anatomically speaking, separated from the oviducts, excepting during the first few months of fœtal life—Meckel and Rosenmüller—in a physiological point of view, the generative intestine is *one* in woman, as it is so anatomically, in many of the lower animals; and whenever these organs are called into functional activity, they unite and become one organ. Thus, during menstruation, and the orgasm of sexual intercourse, the Fallopian tubes obey an elective impulse, in virtue of which the fimbriated extremities embrace that particular part of the ovaries whence an ovule is to escape, so as to receive it, and the fluids by which it is accompanied—a fact which has been repeatedly noticed in women dying during menstruation.

This attraction is the more extraordinary, because at that time the Fallopian tubes are full of mucus, which would seem to forbid the adhesion of the fimbriæ to the distended ovary; and still this attraction is strong enough to resist the sudden passage of the neighbouring viscera—bladder, intestines, &c.—from a state of repletion to that of vacuity. To render this easier, one of the fimbriæ is generally longer than the others, and is attached to the ovary so as to act on the Fallopian funnel in its vicinity. That the fimbriated extremity of the Fallopian tube embraces the ovarium during coïtus, and when the animal is in heat, has been stated by numerous authors, and most

positively by Cruickshank, in the following words:—"The Fallopian tubes, independent of their black colour, were twisted like writhing worms, the peristaltic motion still remaining very vivid. The fimbriæ were also black, and embraced the ovaria—like fingers laying hold of an object—so closely and so firmly as to require some force, and even slight laceration, to disengage them."—*Philosophical Transactions*, 1797. De Graaf observed similar phenomena on a woman who had been killed by her husband on his detecting her in an adulterous act.

It has even been asserted by Dr. J. E. Pank—*Archives Gén. de Méd.*, 4th Series, Tom. iv.—that the Fallopian tubes are always united to the ovaria by a thin membrane. This opinion is founded on the following fact:—Opening the body of a girl who died asphyxiated, during menstruation, Dr. J. E. Pank found "that the fimbriated extremity of the right Fallopian tube embraced the corresponding ovarium, being not only placed in apposition with it, but even connected to it by means of a very thin, transparent membrane, which, leaving the fimbria extended on all sides over the ovarium, thus formed a bond of union between these two bodies." This membrane was doubtless a product of inflammation; but notwithstanding the temporary anatomical hiatus, there is, during the reproductive period of woman's life, so constant an interchange of physiological and morbid stimuli between the different portions of the generative intestine, that in a pathological point of view we may consider it one.

The periodical congestion of the ovaries is an acknowledged fact, and was strikingly exhibited in the patients formerly observed by Verdier, and lately by Dr. Oldham, p. 24. We may therefore admit, that if by any cause this state of congestion were carried to a greater degree than ordinary, or protracted beyond the usual time, inflammation might attack the organ itself; and we find that in many of the published cases of ovaritis the disease came instead of the menstrual discharge, or in the midst of it. The fact of the physiological irritation of the ovary passing into true inflammation is confirmed by the phenomena of ovulation as they may be studied in the lower animals, and may be accidentally met with in woman.

Among the predisposing causes, one of the first to be mentioned is, constitution. The disease may indeed occur in all constitutions, but is most frequent in delicate and nervous women, particularly if they present the characteristics of the ovarian temperament, as described in p. 35. Seven out of Professor Pistocchi's cases were nervous patients of warm feelings, but in many of our own cases, although the patients presented the characteristics of the ovarian temperament, they had always been indifferent to, if they had not loathed the marriage rites. Dr. Ogier Ward mentions a similar case.

Women with long eyelashes, blue sclerotica, and scrofulous antecedents, are said to be most liable to ovaritis, by Burns, Jepherson, Copland, Boivin, and Dugès; and some of our cases have presented these appearances. Let us suppose the phenomena of menstruation taking place in one of those delicate girls whose constitu-

tion we have indicated—who may perhaps, in her childhood, have been subject to mesenteric deposit, or tubercular peritonitis, not uncommon in children, followed by adhesions of the uterine appendages, and a swollen state of the ovaries. The first establishment of menstruation may be attended by serious disturbance, and its return is often attended by the painful symptoms hereafter to be described. Marriage gives an additional impulse to the morbidly disposed ovaries. If, by conception, the ovaries are placed in contact with their final stimulus, this may awaken in them a diseased action, which otherwise might have remained dormant for a time, or have completely disappeared. Abortion is not unfrequently brought on by the nervous ovarian impulse soliciting the expulsion of the fœtus; or the uterus may be bound down by adhesions, which preclude the possibility of its expansion. Should childbirth occur, with its attendant determination of fluids to the pelvic organs, how fatal to ovaries predisposed to disease may be this superabundance of materials and vitality with which they are, for a time, entrusted!

Amongst the physiological, and therefore predisposing causes of sub-acute ovaritis, we have alluded to sexual intercourse. The sexual stimulus is not unfrequently a cause of sub-acute ovaritis in newly-married women, as the effect of the first impression of a novel stimulus, and its imprudent indulgence. Dr. Ritchie admits that this is frequently the case, and Dr. Nonat, of Paris, has drawn attention to this.—*Gaz. des Hôpitaux*, Feb. 28, 1850. But it is more especially the sequel of the culpable exercise of intercourse, as seen in women in every respect unfortunate. Walter and Renaudin state, as the result of their experience, that the ovaries of prostitutes are seldom without some morbid lesions, and Dr. Oldham has lately confirmed their assertion by describing these lesions, which are those of ovaritis. These lesions may be reputed to have caused alternations of amenorrhœa and menorrhagia, which is a consequence of prostitution according to the statistical inquiries of Parent-Duchatelet. We have in some cases been able to ascertain the truth of an assertion made by Retzius, that women of a certain age who have borne children, and have not suckled them, are liable to ovaritis.

When marriage occurs late in life, it seems as if the ovaria, having been debarred their proper stimulus when most needed, become so accustomed to the privation, that when the stimulus is at last presented to them it produces a morbid impression. This is only one instance of a general law, for when an organ does not receive its normal stimulus, it expresses its instinctive desires by some perturbation of nervous function, which, from being local, may react on the system; thus, as the stomach is irritated by a meal taken long after it was due, and is followed by indigestion and dyspepsia, so the ovaries, when they only receive their stimulus late in life, become irritated, or determine nervous reactions.

Sub-acute ovaritis may be the consequence of marriage during the change of life, in which cases, it reacts on the uterus so as to produce those sudden floodings which so often terminate menstruation. Marriage is, therefore, very dangerous during the dodging time, and for

some time afterwards, for the periodical congestion which has lasted for so many years, does not at once subside; it still continues long after the menstrual flow has ceased; and as this ovarian congestion is not relieved by its accustomed discharge, the ovaries are liable to inflammation, if such a result be not carefully warded off by repeated purgatives and judicious bleeding, according to the practice of our medical forefathers—a practice, perhaps, too much neglected in our own day. This crisis in female life is particularly dangerous, both to those involuntary nuns of a society overstocked with women, who have impatiently borne the burden of their virginity, and also to those who have given themselves up to excesses of sexual indulgence.

The absolute privation of sexual stimulus is no doubt a cause of sub-acute ovaritis in women whose passions are strong, particularly when they are excited to their satisfaction by many of the fashionable amusements of civilised society. Then women suffer from one of the many forms of hysteria, sometimes caused by ovarian inflammation.

If the absence of sexual stimulus may, in certain women, give rise to ovarian irritation, this is still more likely to occur in those who are suddenly denied the matrimonial stimulus to which they had been long accustomed, as in young widows, whom Hildenbrand considers to be often attacked with this complaint, and still more so, when intercourse, after having been habitually inordinate, is suddenly prevented, as in prostitutes, many of whom, when placed in confinement or in institutions where they may be reclaimed, are subject to hysterical symptoms and abdominal pains hitherto inexperienced by them.

We cannot close the catalogue of predisposing causes without including certain influences, which we shall call, for want of a better name, psychical causes. We allude to all those excitements which tend to exaggerate the impulse of unsatisfied desires—desires which, though natural in themselves, may be pampered by bodily and mental inactivity, and unduly excited by thoughts, books, pictures, conversation, music, and the fascinations of social intercourse—burning desires, which cannot be quenched by their legitimate satisfaction—at least, in our capitals, on account of the greater proportion of marriageable women than of men, who are attracted to every vortex of civilisation, so that the organs which prompt such desires cannot be relieved by the natural orgasm by which they are placed in a state of vital turgescence. If, as we are told by naturalists, birds, without the congress of the male, lay eggs under the influence of impressions calculated to promote sexual feelings, such as the crowing of their mate; if, as it is well known, the bitch and the sow and other animals are even in the virgin state sometimes subject to spurious pregnancy, or to an increase of size, sometimes protracted to the full time of pregnancy, and followed by a secretion of milk—of which state fresh confirmations have been lately given to the Edinburgh Obstetrical Society—we must admit the influence of sexual incitements of a psychical nature on the formative power of the ovario-uterine organs, and we may fairly infer that similar incitements of the mind of females have a stimulating effect on the organs of ovulation.

We have frequently known menstruation to be irregular, profuse, or abnormal in type during courtship, in women, in whom nothing similar had previously occurred; and, perhaps, the phenomena of spurious pregnancy which, in unmarried females, gives rise to hysteria, or dyspepsia, may, as Dr. Laycock believes, depend upon ovarian irritation, and may be the product of the causes under discussion.

A late writer on diseases of menstruation, Dr. Dusourd, attributes even to these causes a greater influence than ourselves. "Les lectures et les entretiens Crotiques," says this accurate observer; "les tableaux fictifs de l'imagination, excitent bien plus les organes de la génération que la présence des hommes. Ils exaltent tellement, que j'ai vu plusieurs fois des inflammations se développer aux parties génitales par cette seule cause sans attouchement et sans action des agents extérieurs."

We must not forget how powerfully the same causes operate on man, and as they promote in him the secretion of the seminal fluids, we may therefore infer that they produce on woman an analogous effect. When we consider how much of the lifetime of woman is occupied by the various phases of the generative process, and how terrible is often the conflict within her, between the headlong impulse of passion and the dictates of duty, we may well understand how such a conflict must react on the organs of the sexual economy in the unimpregnated female, and principally on the ovaria, the acknowledged centres of the sexual system, causing an orgasm which, if often repeated, may *possibly* be productive of sub-acute ovaritis.

The left ovary is evidently more liable to idiopathic inflammation than the right, for in adding 17 cases of sub-acute ovaritis, mentioned in our first edition, and 16, which we have carefully noted since then, we obtain a total of 33, of which cases 9 occurred on the right side, 17 on the left, and both ovaries were affected in 7 patients. We have collected from various sources 26 cases of idiopathic acute ovaritis. It occurred on the right side in 7 cases, on the left in 15, and both ovaries were affected in 4 instances. In 9 other cases of acute ovaritis mentioned in this work, it occurred on the right side in 5 cases, on the left in 2, and both ovaries seemed affected in 2 cases. Adding these three lists, it would appear that idiopathic ovaritis occurred

On the right side in	21 cases
On the left side in	34 ,,
On both sides in	13 ,,

so that it occurred only on the left side in 50 per cent. of cases. Our experience, therefore, confirms the assertions of Dr. Rigby, Chereau, Tanchou, and Pistocchi, upon a point which is not without interest, because the right ovary is said to be most frequently affected with ovarian dropsy, and also because, according to the statements of Grisolle, iliac abscess occurs much more frequently on the right side. Neither can it be out of place to mention that in birds the right ovary is rudimentary, while the left does all the work. The ornithorhyncus presents the same peculiarity. It has been thought that the left ovary is more liable to be irritated than the right, on account

of the varying condition of the rectum, which enters the pelvis towards the left.

Dr. Gordon, however, writing on puerperal fever, says: "In all the subjects I dissected, the right ovarium was affected, the left sound; and in all the three cases, that ovarium was affected in which impregnation had taken place."

Roux has pointed out the congenital shortness of the vagina, as being not an unfrequent cause of ovarian and uterine inflammation in those who are placed under matrimonial influences.

In one of our patients, an evidently enlarged ovary emptied itself three times in the space of eighteen months, the pus being passed per vaginam. The lady's mother had been similarly affected after her confinements.

EXCITING CAUSES.

Some of these are mechanical: falls on the feet, on the knees, or on the sacrum, have brought on ovaritis; blows and falls, violent jolting on horseback, riding, particularly immediately after menstruation, has had the same effect. These mechanical causes have necessarily an increased power of action when they occur during menstruation, even if they do not determine the suppression of the discharge.

Is Masturbation a Cause of Ovaritis?—Harvey—"Exercitationes de Generationæ Animalium," Lond., 1651, p. 18—and Blumenbach—"Klaine Schriften," p. 14—and other naturalists, affirm that at certain times many female birds willingly submit to this physiological experiment, and that a little afterwards they lay imperfect eggs. Pouchet and many authors believe that similar practices may produce spurious pregnancy in woman, or morbid ovulation and inflammation of the germ-gland. Hufeland and Harles are of this belief, and they have published—*Hufeland's Journal*, Tom. ii., p. 184—the case of a girl, thirteen years old, from her infancy addicted to masturbation, and in whose left ovary was found a piliferous cyst.

That any of our patients were guilty of this pernicious practice we know not, but it was the case with two of Pr. Pistocchi's, and in his sixth case the habit had been so pertinaciously adhered to from childhood, that we think it partly caused ovaritis. To cure this habit, and to strengthen the constitution, marriage was advised, but as connexion was painful and brought on cataleptic fits, the unfortunate woman again resorted to onanism to satisfy her feelings.

When onanism is practised, it is seldom discovered by relatives, and can only be guessed at by the physician. A friend of ours was lately consulted for a girl seventeen years of age, in a large and very respectable school for the children of those who had known better circumstances, and he found that retention of urine had been produced by a glass bottle which had been introduced into the vagina and could not be extracted without surgical assistance.

"The structure of the ovary is never so well exhibited as in women who die immediately after confinement," says Professor Roux; and his statement is justified by its increased size, the diminished density

of its structure, and the greater development of its blood-vessels—circumstances which give to the ovaries of puerperal women a spongy texture, and no doubt predispose them to ovaritis. This may be determined by the mechanical pressure of the softened ovary between the impregnated womb and the hard structure of the pelvis during a laborious labour.

Morgagni, the founder of pathological anatomy, has noted as a cause of pelvic abscesses, the bruising of the cellular tissue, its rupture, and the effusion of blood into its cells. The action of this cause is further shown from what Mr. Taylor—*Med. Gaz.*, May, 1848—observes respecting the causes of *post-partum* pelvic abscesses which did not arise in puerperal fever. Thus, out of 61 cases, a probable cause is mentioned only in 14; 3 were cases of instrumental labour, 4 lingering, in 4 abscess came on after exposure to cold, 2 occurred during puerperal fever, and 1 after the operation of version.

In 29 cases, 15 were 1st confinements
„ 5 were 3rd „
„ 4 after 5th „
„ 3 after 4th & 2nd „
„ 2 after 7th „

In 33 cases collected by Mr. Bell—
25 were 1st confinements
5 after 2nd „
3 after 3rd, 4th, & 5th.

With regard to age, the majority occurred between twenty-three and thirty. From the above circumstances, we may conclude, that although no cause could be assigned in the majority of cases, yet, that first confinements, labours requiring the assistance of art or prolonged from impaction of the head and exposure to cold, render the patient more liable to the affection. We may therefore agree with Dr. Lever, that any disproportion between the child's head and the pelvis of the mother will increase the likelihood of subsequent inflammation of the ovaries and Fallopian tubes.

A possible cause of ovaritis may, perhaps, be deduced from the function of the Fallopian tubes, or oviducts, as they should always be styled. They are the means of conveying the ova and a portion of the menstrual discharge from the ovaries to the uterus. They convey the seminal fluid—by a species of capillary attraction—from the womb to the ovaries: they have been known to transmit pus from the ovaries to the womb, and when enlarged, they may, by capillary attraction, transmit pus from the womb to the peritoneal covering of the ovaries. This is an explanation countenanced by Cruveilhier and Haller, and which we only give as possible.

A very rapid delivery, and the tearing away of the placenta, have appeared to bring on ovaritis; but there is another cause of puerperal ovaritis which was formerly considered the only one—namely, the sudden suppression of the milk. If it be absurd to admit, with Guillemeau, Mauriceau, or Puzos, that in puerperal tumours it is the

milk secreted in the mammary glands which is deposited in the broad ligaments, it seems to us equally absurd to shut our eyes to the fact, that sometimes, when a patient is doing well, the sudden suppression of the mammary secretion from cold, or from other causes, is followed by the immediate development of tumours in the broad ligaments. What we know of the intimate sympathetic connexion existing between the ovaries and the breasts enables us to understand how the suddenly suppressed action of the mammary glands should excite the ovaries. "Mulieri si velis menstrua sistere, cucurbitula quam maximam ad mammas appone."—*Hippocrates*, Aphor. l., Sect. V.

Do we not see similar reactions between organs bound together by less intimate ties of connexion? Are not the sudden suppressions of cutaneous eruptions frequently followed by some internal inflammation? The sudden suppression of the lochial discharge from the imprudent application of cold is likewise sometimes followed by metritis or ovaritis. Moreover, Grisolle and Marchal de Calvi say that women who do not suckle are more subject to pelvic abscess, and the first affirms that he never observed an iliac abscess in a woman who was giving suck.

All the causes of suppression of the menstrual flow, when it is about to be eliminated, or during its elimination, may thereby cause ovaritis. These causes are numerous, being very powerful in some women at the time stated, and without effect in others. A violent perturbation, mental or moral, sudden joy, grief or anger, connexion, drastic medicines, the taking of blood from the arm, or, what is a still more powerful and frequent cause, cold. The action of cold is not only indirect, like that of the preceding causes, but palpably evident. Dr. Oldham mentioned to us, that having ordered cold water to be injected per rectum, to stop flooding, acute ovaritis suddenly supervened. We have met with a similar case, and they can be well understood, since painful colics and prodromata of peritonitis have often followed the use of a speculum when cold. But, besides this manifest action of *cold*, it has an indirect one, already remarked by Galen—*De Venæ, Sect. Advers. Erasistratus*, c. 3—that when the Roman women constantly drank very cold water, or melted snow, menstruation was either much diminished or suppressed. It is very singular that an ice taken during menstruation should stop the flow, congest the ovary or womb, and produce their inflammation, but such may sometimes be the case if wet under-clothes or wet shoes be retained for a few hours, or even from the hands being dipped in cold water.

That the protection of the feet from damp is a point of great importance, few will dispute; but what *we* consider of still more consequence, in a fitful climate, is effectually to protect the pelvic organs by drawers, so that the patients may be somewhat independent of our piercing easterly wind, of our cold, clammy atmosphere, and of all those sudden transitions of our own or of nature's making. If we dwell on a point which may seem of little importance, it is because Brierre de Boismont and Ricord are

likewise firmly convinced, that by the use of means so simple the number and intensity of the diseases of menstruation may be greatly diminished. Many of our countrywomen fancy that they would surrender a portion of their eminently feminine character by adding to their apparel an appendage considered masculine in this country —a prejudice that is naturally confirmed by the well-known proverbial expression, " she wears the breeches," by which discredit is sometimes thrown on both contracting powers of a matrimonial alliance. The practitioner should use his endeavours to combat this prejudice, and we trust his efforts will be more successful than have been the many professional crusades against tight lacing.

Dr. Handyside, who has been for thirty years in practice at St. Petersburgh, writes to us that in women of the higher classes the menstrual flow is always much deranged during the winter. Dr. Ferguson, colonial surgeon to the Swan River settlement, and Dr. Alleyne, formerly colonial surgeon at Demerara, inform us that painful disorders of menstruation are most frequent during the cold and rainy season. Dr. Hannover, of Copenhagen, has shown that while the use of Russian or tepid baths during menstruation would leave the flow unchanged in one case, it would make it shorter, weaker, and irregular in six. Whether the action of cold be direct or indirect, its influence in checking the menstrual flow, and thereby sometimes causing inflammatory affections of the reproductive organs, cannot be understood, except by the hypothesis, by which we have attempted, p. 90, to explain the phenomena of menstrual suppression. The ovarian nisus is interrupted by a sudden shock applied to the ganglionic nervous centre, by which the menstrual flow is impelled.

Cold, internally or externally applied to the body, disturbs the normal ovarian nisus, as it does its abnormal cerebro-spinal phenomena, called hysterical fits, except in rare instances, such as that of the notorious Teroenne de Mericourt, who, winter and summer, would, with naked feet, pace the stone floor of her cell, which she night and morning deluged with cold water. In winter she would break the ice to get at the water; and yet, though she continued this kind of life for ten years, Esquirol says that during the whole time her menstruation was regular. But if, in insanity, the functions chiefly depending on the ganglionic nervous system are steeled against the action of perturbing influences, in other women the suspension of the *impending* flow is sometimes followed by sub-acute ovaritis, accompanied by dysmenorrhœa and hysterical symptoms. When, on the other hand, they operate *during* the menstrual flow, the sub-acute ovaritis they may produce is often attended by engorgement of the uterus, which is accounted for by the active congestion of its tissues, and the retention of blood in its cavity.

According to some authors, suppression of menstruation gives rise to ovaritis in those who have not borne children, and to metritis in those who have. This is but an assertion. The retention and suppression of the menses has a twofold influence in the production of ovaritis, and we may also add, disease of the pelvic organs in general,

as we shall hereafter show: by the retention of what was to have been excreted, and the consequent congestion of the organs which secrete the menstrual discharge, and by the interference with the ovarian function, and the subsequent oppression of the system by some reflected influence of a nervous kind. For how can we suppose that sudden death, in the midst of alarming convulsions and delirium, could be solely produced by the retention of a few ounces of blood; or, if we could even admit such an explanation, what should we do under circumstances similar to those of authentic cases wherein the same symptoms have been brought on by the suspension of the *impending* menstrual flow?—Morgagni, *Litt. Anal. Méd.*, 1845: Rullier, *Dis. Inaugurale*, Paris; Whitehead, *London Medical Gazette*, April, 1848. We have given, p. 90, our explanation of such cases.

We now come to a cause of too much importance to be lightly treated—the retention of the catamenia. This may be either the cause of ovaritis or one of its symptoms, and we shall now consider it in the first point of view. Retention of the menses may be: Firstly, congenital, as in those numerous cases where it is the result of occlusion by the hymeneal membrane, or of the uterine aperture. Secondly, it may be accidental, being produced by the blocking up of the passage of the vagina, resulting from a previous parturition, or the pressure of tumours, as in a case related by Dugès. It may depend on the gluing together of the os uteri after parturition, or on the case not being attended to, after cauterisation of its internal surface, and also on the inflammatory tumefaction or the spasmodic contraction of the cervix.

The mechanical effects of retention of the menstrual flow are, the repletion of the womb and the Fallopian tubes, the distention by the muco-blood, and the regurgitation of this blood into the peritoneal cavity. We give this as a *possible* cause of ovarian peritonitis.

It has even been proved that in some rare cases the distention of the Fallopian tubes is so great as to detach the fimbriated extremity from the ovarium, allowing a flow of blood into the peritoneum, and thus producing peritonitis—*Archives Gén. de Méd.*, 1848—and if this possibility of a regurgitation of blood from the tubes into the peritoneum be not admitted, how can we explain Botal's case of a woman who died very suddenly four hours after syncope, and in whom an abdominal effusion of blood was found unexplained by any rupture of the neighbouring vessels; or that given by Smellie—Vol. iii., Obs. xiii., p. 338—of a woman who died during her confinement, and on the peritoneal surface of the uterus a large clot, 15 inches long, and 12 broad, was found, unexplained by any rupture of the vessels?

Our explanation is that of Mme. Boivin and of Ruysh, who, on opening the body of a woman, found the pelvis full of blood, and, after a careful but unsuccessful search for another origin of the hemorrhage, concluded that the blood had passed from the womb to the peritoneal cavity by the Fallopian tubes.

Turning from the *possible* to what rests on incontrovertible proof, we come to the pathological causes of ovaritis, the transmission of

various forms of inflammation from the uterus to the ovary by the Fallopian tubes.

The catarrhal affection of the neck of the womb produces engorgement of the uterus and sub-acute ovaritis in the same way that inflammation of the duodenum gives rise to hepatitis, while that of the urethra causes daily that of the testicle; and in the same way that inflammation is not unfrequently transmitted to the neck of the womb from the external organs of generation.

Extensive ulceration of the internal surface of the neck of the womb may give rise to ovaritis, and without appealing to our own practice, we shall quote the example of intense inflammation of the neck of the womb which Mme. Boivin has depicted in her *Atlas*, and with which coincided an inflammation of the right ovary, as also to the remarks of Columbat de l'Isere, vol. ii., p. 545.

We subjoin an abstract of an observation published by Dr. Duparque—*Traité des Maladies de la Matrice :*

Case 34.—A woman was married at twenty-five years of age, and soon afterwards the menstrual flow diminished, and was sometimes absent, while she experienced severe pain in the right ovarian region. The womb, and particularly the posterior lip of the os uteri, were congested and swollen. This state of things had existed for three years, when, in addition to the pain, a swelling was detected in the right ovarian region. The inflammatory congestion of the womb was removed by leeches applied to the neck of the uterus ; but the ovarian tumour continued to increase, and became twice the size of a man's fist.

Dr. Doherty also states that he has met with chronic ovaritis supervening on malignant diseases of the womb. But it is principally in that peculiar form of catarrhal inflammation of the internal surface of the neck when no ulceration can be detected, and where a diminished uterine orifice is plugged up with solid mucus, that the transmission of inflammation to the ovaries is most frequently observed.

This is a very tedious form of uterine disease, and after lasting some time a new state of suffering begins ; deep-seated pain is felt in the ovarian region of one or both sides, which may be followed by a distinctly perceptible ovarian swelling. Dr. Melier was the first to draw particular attention to this succession of morbid phenomena —*Mémoires de l'Académie Royale de Médecine*, vol. ii. In a case he attended with Dr. Roche, the patient had for a year been affected with catarrhal inflammation of the neck, accompanied by pain behind the pubis ; when she began to experience a totally different kind of suffering in the iliac regions, and an ovarian swelling could be distinctly felt in the right iliac fossa. Whenever the pain in the cervix was exasperated, the ovarian tumour became likewise more painful, and on attempting to dilate the uterine orifice, the process caused the tumour to be more painful. Dr. Melier has seen several cases of this description, and it has also fallen to our lot to witness some, in which so great a sympathy of feeling has existed between the two organs, that any increased inflammation of the womb produced increased inflammation of the ovary, and by healing the uterine surface

we have abated ovarian irritation. In a case of ovarian abscess lately published, "the only cause," says Dr. Tanner, "was the chronic inflammation and ulceration of the neck of the womb."

In proof of our position, we may record the case of a young lady affected with ulceration of the cervix uteri, and likewise a swelling of the ovary to triple its usual size. The disappearance of the tumour followed the cure of the inflammation of the cervix by cauterisation with the actual cautery. In another case of uterine disease, which had caused the right ovary to attain to quadruple its usual size, Lisfranc amputated the neck of the womb, and six years afterwards the tumour had not increased. But why should we seek for instances out of the particular subject at present in hand? since we often find symptoms of ovarian engorgement disappear from merely treating the uterine ulceration—a fact which is admitted by our friend Dr. Bennet, who says, in p. 43 of the third edition, "The propagation of acute inflammation from the uterus to the lateral ligaments so often occurs, that we shall hereafter see that it may be considered one of the natural terminations of acute metritis." It is again admitted, p. 232, "that the disease of the cervix may be the point of departure of the inflammatory action, which thence extends to the lateral ligaments;" and at p. 340, "that there is great danger of inflammation passing from the lateral ligaments, and giving rise to abscess."

If such be the case, if the transmission of inflammation be so frequent from one to the other, and the danger so great, we regret that Dr. Bennet did not give us the result of his experience on this subject, for on referring to his chapters on the causes and terminations of metritis and of inflammation of the neck of the womb, we find that he has omitted to treat of ovarian inflammation, either as a cause or as an effect of uterine disease.

Thus ovaritis is often an attendant on metritis; sometimes the two diseases co-exist, and then the former is masked by the symptoms of metritis. Gendrin explains the simultaneous inflammatory seizure of the womb and the broad ligaments, by the fact of nerves and arterial vessels ministering in common to the womb, the ovaries, and broad ligaments. If idiopathic inflammation of the womb produce ovaritis, it stands to reason that the same result may follow the use of injections, or of those active agents—instrumental interference—by which we seek to substitute a healthy inflammatory action for a morbid state, and that there may be therapeutical causes of diseases of the ovaries and of the womb.

INJECTIONS.

Styptic injections employed to stop flooding in the parturient woman, as well as stimulant injections into the cavity of the womb, have been known to produce ovaritis and other pelvic inflammations. Even vaginal injections should be then very carefully made, for the water entering the womb may cause metritis, and the extension of the inflammation to the neighbouring tissues.

In the unimpregnated womb, Mr. Fenoglia—*Rep. Méd. del Piemonte*—records a case of acute metritis produced by a vaginal injection of five drops of spirits of ammonia in five ounces of fluid; and Dr. Bennet says, "the two most severe instances of acute metritis that I have myself witnessed in the unimpregnated womb, occurred after the use of weak astringent vaginal solutions." But these are exceptional cases, and cannot prevent our daily prescribing similar injections.

It is different, however, with uterine injections, which were strongly recommended by Vidal de Cassis, and also by Lisfranc and Ricord, to cure chronic uterine *catarrh.* Hourman first, and then Robert and Malgaigne, have shown how dangerous was this practice.

Our friend Dr. Aran, of the Paris hospitals, tried injections of nitrate of silver in the neck of the womb, in twelve cases of its internal inflammation, formerly called chronic catarrh of the womb. Two of the patients recovered as speedily as when gleet is cured by a similar plan of treatment; none of the twelve died, but the accidents were too serious to warrant the treatment. Thus in some, as soon as a few drops of the solution had touched the uterine surface, and long before any of it could have passed through the Fallopian tubes to the peritoneum, intense pain, meteorismus, and peritonitis were experienced. Ten of the twelve had metro-peritonitis, four had ovaritis and inflammation of the broad ligaments, and these accidents cannot be said to depend entirely on the irritating nature of the fluid injected, for M. Leroy d'Etiolles has twice seen ovaritis caused by emollient injections into the womb.

Dr. Aran also told us that a young fellow-practitioner once asked him to see a case of uterine disease which had much perplexed him. A solution of nitrate of silver had been several times injected into the womb, causing intense pain, and a considerable loss of blood. On examination, Dr. Aran was struck by the livid tint of the vagina, and by the softening of the neck of the womb, which induced him to pronounce the patient pregnant, and time proved the correctness of his diagnosis. Thus the nitrate of silver injection probably entered the cavity of the womb, detached a portion of the placenta, but did not cause abortion. Such a tolerance cannot be expected, and it is evident from what precedes, that injections to the neck of the womb should be rejected.

CAUSTICS TO THE NECK OF THE WOMB.

Gendrin has drawn particular attention to metro-ovaritis, as a consequence of the too frequent cauterisation of the neck of the womb, or its being done in the acute stage of its inflammation. In a clinical lecture, after reminding the pupils of the case of a woman who died of peritonitis from the rupture of a large pelvic abscess, which was caused by two successive cauterisations with the acid nitrate of mercury during the acute period of inflammation of the neck of the womb, he adds: "This result of cauterisation—metro-ovaritis—is evidently a common complaint, for many instances of it may be

found all the year round in every clinical ward in Paris, and as this *may* follow cauterisation when most judiciously performed, it behoves every practitioner to insist on the patient taking more than usual care of herself after its performance; it behoves him to watch for the first indications of metro-ovaritis, and not to repeat the application until there be no chance of rekindling the inflammation determined by the first application." Every fourth or fifth day the nitrate of silver may be employed, but a longer space of time must elapse between the applications of nitrate of mercury and Vienna paste. Every now and then we hear of patients being examined with the speculum, once or even twice a day, and cauterised every second day. Now, this is not the practice expounded by Dr. Bennet; this is not the practice we both of us learned from Recamier, from Lisfranc, Gendrin, and other eminent men—this is mal-practice.

Energetic cauterisation may also indirectly cause the retention of the menstrual flow, and peritonitis by the occlusion of the uterus. This accident is in general the patient's fault; for if the ulcerated surface left by the falling of the eschar were gently touched with nitrate of silver every third or fourth day, adhesion would not take place. It is therefore the duty of the practitioner to warn the patient of what may be the consequence to her, of a neglect of treatment.

Such cases have been met with by Dr. Williams, of Swansea—*Med. Gaz.*, March 15, 1850—and in France by Dr. Bernutz, who remarks—*Archives Gén. de Méd.*, Feb., 1849—"But these are not the only cicatrices produced by these cauterisations, of which so extensive a use is now made; the excretion of the menstrual flow from the neck of the womb is often rendered difficult, and sometimes impossible, by cicatrices—coarctations—situated at the inferior orifice of the os uteri, and even in a higher portion of the canal."

We have ourselves seen several cases. In the first of these we merely made an opening about half an inch in length, but the patient having neglected to return to us, this opening closed, and the following month she suffered from the same symptoms of retention of menstruation. We then made a crucial incision, snipped off the angles of the distended membrane, and touched it twice with nitrate of silver. This effectually prevented the re-occlusion.

It may not be inadvertent to remark, that in some highly nervous subjects the inflammatory surface of the neck of the womb cannot be cauterised without determining severe hysterical seizures, and that it may therefore be necessary, previous to the first application of caustic, to place the patient under the influence of chloroform; for unless the practitioner annihilates the morbid uterine stimulus of the nervous system, it will continue to determine hysterical phenomena.

INSTRUMENTAL INTERFERENCE.

Contrary to the views entertained by Pr. Simpson, that when the uterine sound cannot freely pass the *os internum* this is morbidly contracted, we believe that such is its normal state, except during men-

struation or parturition, and that its relaxation, like that of the *os externum*, is indicative of inflammation. If this be true, the uterine sound, even in cautious hands, may do mischief. Thus an extremely judicious obstetric physician, attached to one of our largest metropolitan hospitals, told us that he is afraid of it, having once by its use caused a pelvic abscess which required opening. A sensible practitioner will not infer from this that Dr. Simpson's "bent wire" is an abomination, but that it must be used with tenderness, by experienced men, and only when necessary to establish some important point of diagnosis.

METROTOME.—Lisfranc—*Clin. Chy. de la Pitié*, vol. ii., p. 140—gives a case wherein the neck of the womb seemed as if pierced with a gimlet, so small was the opening of the os uteri. To cure sterility in this case, he slit open the neck of the womb with a *lithotome caché*. Dr. Simpson has recommended the same operation for the same infirmity, with an instrument called a *metrotome*. This, even in Edinburgh, is not unfrequently followed by very serious flooding; and the highly instructive case lately published by Dr. Oldham, in the Guy's Hospital reports, shows how fatal may be the result of an operation not even warranted by the nature of the disease; for the uterus was sound, while the ovaries and Fallopian tubes were evidently inflamed, one of the latter being obliterated.

But if the patients recover from the operation without flooding, it is still frequently useless, because the wound heals. Dr. Bennet tells us that he has several times seen an almost impervious stricture of the os uteri in consequence of Dr. Simpson's operation, although performed by himself; and we have shown that retention of the menstrual flow sometimes entails great abdominal suffering, if not peritonitis. We submit, therefore, that the use of the metrotome should be discarded altogether, and that stricture of the os externum should be treated by bougies. But if the womb is to be slit open, let the operator bear in mind a statement made by Huguier, "that where the upper third of the neck of the womb unites with the middle third, the neck is encircled by an artery as large as a crow-quill." It was the wounding of this artery which in Malgaigne's case caused the patient's death, as will be related. We may even add, that if Recamier avoided wounding this artery, and lost little blood in his numerous operations, it was because he made a rule of finishing the division of the neck of the womb by tearing it.

STEM PESSARIES.—"If all pessaries, of whatever form or shape, increased prolapsus uteri instead of relieving this infirmity, physicians, surgeons, and women would have long ago rejected them altogether." So says Morgagni—*Epis.* 45—with his usual sound sense.

Singularly enough, Hippocrates has alone sought to combine quality and form by using as a pessary a pomegranate steeped in wine. A great many attempts have been made of late to devise other pessaries, but their inventors forget that many uterine deviations and flexions are *congenital*, as Morgagni and Jobert de Lamballe have well proved,

and therefore beyond the pale of treatment, or else of so long standing that they cannot be permanently *redressed ;* and that in the majority of cases they are perfectly *harmless*—a fact which has been lately brought into the strongest relief by Professor Paul Dubois, and Hervez de Chegoin, while in other cases, as in two of Malgaigne, the deformity disappeared after a time—facts which have been received without contradiction in a late important discussion on uterine disease in the Académie Impériale de Médecine.

Dr. Simpson has sought to remedy the ill effects of uterine deviations by introducing a metallic stem through the neck of the womb and into its cavity. This is good in theory, but what are the results ?

Dr. Hervez de Chegoin has asserted that sometimes retroversion of the womb, by its pressure on the ovaries, may irritate them ; but we think Dr. Rigby has exaggerated the importance of this cause of ovaritis, and that, in some of his own cases—*Med. Times*, Dec. 1, 1849—the use of the stem-pessary, without curing the retroversion, prolonged ovarian and uterine irritation. Dr. Oldham, in discussing this subject, says : " I have never met with a single instance of this description, and I think the opinion is made to square with Dr. Rigby's views of the advantage of mechanical relief in these cases."

The instrument is tolerated by some women, and when in Edinburgh, in 1850, Dr. Simpson showed us a patient, the wife of an English butler, who assured us she had worn a metallic stem-pessary with comfort for three years. Dr. Simpson says that in Edinburgh, except in some extremely rare cases, the instrument does not determine any bad symptom, but that, on the contrary, it relieves those sufferings previously experienced by the patient.

The experience, however, of medical men in London does not agree with that of Dr. Simpson. Many obstetric physicians of eminence with whom we have conversed on the subject, believe the use of the stem-pessary to be dangerous, and think that if it were well borne in Edinburgh, it must have been placed in the neck of the womb without entering its cavity ; but, from the length of the stem in those cases for which we saw Dr. Simpson apply the instrument, we feel convinced that this is not correct.

Mr. Bransby Cooper has reported a fatal result of the use of the stem-pessary, which will be found in another page ; and the dangers of its use are confirmed by Dr. Ritchie's statements in his article on General Diseases—*Edin. Med. and Surgical Journal*, January 1, 1851 : " In regard to the gross impropriety of retaining metallic substances within the uterus, I have a strong opinion. I do not doubt that in the patient, whose case I have detailed, serious mechanical injury was inflicted on the uterus by the galvanic bougie, and that had it been longer retained the consequences would have been still more fatal. As illustrative of this, I give the following case :

" I was requested one Saturday evening, about a couple of years since, to visit a lady at thirty miles distance for the purpose of re-

moving from her a metallic stalk-pessary, introduced for the cure of an alleged retroversion of her uterus. There being no conveyance to the place on the following day, I did not see her till Monday, when the agony created by the instrument having become insupportable, she had overcome her fears and got her husband to extract it. I found her labouring under violent hysterical symptoms, much tenderness of the abdomen, and having the genital passage so altered by inflammation that the *os uteri* could not be recognised. After this her confinement to bed was protracted, she ceased to menstruate, and as she had never had a child, a hope began to be entertained by her friends that she had got a compensation for her sufferings by having become pregnant. Dr. James Wilson, from Glasgow, was requested to see her, with the view of settling this point. He ascertained that the uterus was unimpregnated, but that its orifice was obliterated. Soon afterwards, this latter burst and gave exit to a quantity of pus, and in a few months more, her situation not having materially improved, she removed to Glasgow to be under my care.

"On examining the uterus, I found that it occupied the axis of the cavity of the pelvis, but that it had become immovable from the matting and consolidation of its peritoneal surface with the pelvic viscera. A succession of suppurations from the uterus occurred while she remained in Glasgow, and it was not till after many months that she was able to go out of doors, and at this moment she continues an invalid. The subject does not require further comment."

In another case, the stem-pessary determined so much pain, that it was withdrawn, and on examining the lady three weeks after, "I found the os uteri converted into a gaping circular opening of the shape of the cupro-zinc stalk; and the labia, for about an inch all round, occupied by an opaque spot, not unlike that which the application of lunar caustic occasions in the same situation."

After having considered the subject at such length, we have only to conclude with the observation of a judicious reviewer on Mr. Bransby Cooper's case, "that it is scarcely consistent with right principle to seek a doubtful good by means which have been proved to be fatally dangerous even in well-skilled hands;" and with the remarks of John Clarke, "that it would have been better for mankind if the disease had not been known," because, "to remedy a state often unattended by any bad consequences, violent attempts have been made, but with the risk of doing considerable mischief to the uterus."

MEDICINAL CAUSES.

Formerly in England, as now in India, emmenagogues, such as aloes, myrrh, castor, and asafœtida, used to be given to increase the flow of the lochia. This bad practice has been abandoned, and that of giving emmenagogues to promote menstruation has become more and more circumscribed, since we have better learned to treat those morbid conditions which check in general menstrual flow.

Siebold thought that abortive remedies had a decided influence on the production of ovarian disease. The mention of such an opinion,

or the suggestion that such remedies as ovarian specifics might possibly exist, would a few years since have been treated as absurd; but, after the light which has now been thrown on ovarian physiology, it behoves us to inquire whether or not the action of ergot of rye, savine or cantharides, is solely confined to the uterus, or whether such medicaments do not primarily influence the ovaries, which, by reacting on the uterus, incite its contractions?

It will be shown that blennorrhagia may be a cause of acute ovaritis, but nothing proves that the sub-acute variety may result from the same cause. Rheumatic ovaritis is doubted by some authors.

Such is the result of our own experience, combined with that of others, but if we merely take into consideration cases of which we have lately kept notes, we find that with regard to the predisposing causes, 14 out of 15 had brown, red, or auburn hair, with hazel or grey eyes, and only 1 light hair; that only 2 were above thirty years of age, and 10 had not attained twenty-five; that 8 were of a sanguine constitution; in 10 menstruation was habitually irregular or remittent; and in 8 the disease began during the time of menstruation, or a little before or after it. With respect to the determining causes, cold produced it in 3 cases, marriage in 2, abortion in 1, in 1 over fatigue in going up and down stairs, but in 7 no cause could be detected.

CHAPTER XVI.

SYMPTOMS OF SUB-ACUTE OVARITIS.

The same morbid lesions determine different symptoms in accordance with the constitutional peculiarities of patients.

WHEN we consider the physiological conditions of menstruation, and inquire into the symptoms by which it is attended, we find that in some women this species of parturition is not productive of more pain than is the act of oviposition in the fish. Generally speaking, however, it is preceded and accompanied by certain symptoms, which present the diminished but faithful portraiture of what has been called uterine disturbance—sense of fulness in the pelvic region, pains in the loins and in the ovarian regions, pains of an expulsive character, and therefore well termed bearing-down pains, for they typify the labour-like pains of a similar nature, by which a fœtus may one day be expelled. These do not depend on any mechanical pressure, but are merely nervous, and owe their existence to the communications which have been shown to exist between the hypogastric, uterine, and spinal nerves, distributed to the surrounding pelvic viscera, and are often accompanied by heat and swelling of the organs of generation, by cephalalgia, plenitude of the pulse, and other signs of fever. These pains are often extraordinarily aggravated; and when this is the case, we may infer that the ovarian or uterine excitement is passing from the physiological to the pathological type. This inference is confirmed by an increase of heat, often remarked over the site of the ovary, when examining with the hand, or by the finger, during a vaginal exploration. Morbid ovulation, with its attendant uterine symptoms, having once taken place, there will be a tendency to its repetition at each succeeding period; thus giving pertinacity to a disease, which, in any other organ, would cease by degrees.

We shall first give the symptoms which are *common* to ovaritis under all its forms, and afterwards sketch the peculiar phenomena by which the local disease itself is often masked, causing it to be neglected.

PAIN.—Pain is nature's cry for help—it says, "Protect me from injury," and is often felt more in the containing walls of the cavity than in the diseased organ itself. It is so with diseases of the generative apparatus, the sufferings of which are communicated by the hypogastric to the lumbo-abdominal nerves, which give feeling to the abdominal walls, and which remain painful until the disease is cured.

Disease of the ovario-uterine apparatus is, therefore, indicated by lumbo-abdominal neuralgia, characterised by distinct foci of pain. Valleix, however, who has thrown so much light on the study of nervous affections, admits with Dr. Beau that in some cases of uterine disease there are acute pains in the sacral and ovarian regions, without any distinct foci of pain; and the converse is equally true. Whenever there exists lumbo-abdominal neuralgia, menstruation, ovarian, or uterine disease may be detected; and, as Mr. Axenfield observes, in all the cases of lumbo-abdominal neuralgia cited in Valleix's work, there was some amount of uterine disease. Beau adds, that whenever this neuralgia exists, on a careful investigation he finds uterine disease, and that neuralgia has, in several instances, enabled him to foretel the reappearance of menstruation in chlorotic patients.

Pain being thus a symptom common to many diseases, we must see if that of ovaritis has anything specific. The patient experiences a dull pain in the ovarian region, often imperceptible when she is in a state of repose, but brought on by walking, riding, by any sudden movement, or even by pressure on the side. The pain is also increased by the act of straightening the thigh upon the pelvis, as in the erect posture, by which the integuments are put upon the stretch, and pressure is thus exerted over the part. Some patients are unable to maintain the erect posture without resting the foot of the side affected on a stool, so as to keep the thigh more or less bent upon the pelvis, whereby the integuments, &c., are relaxed. We have sometimes seen, in the earlier stages of the disease, a morbid sensation of numbness or of pricking in the corresponding limb.

To protect the organ from external pressure, the patient often assumes a peculiar posture when sitting. For instance, if a patient is suffering from sub-acute inflammation of the left side, she will not sit home on the chair, but sideways on the left tuberosity of the ischiun, with the body bent forward.

With respect to the quality of the pain, it has been compared by some authors to that by which the testicle is affected. Dr. Rigby has dwelt on its sickening nature, and Dr. Woolley, of Brompton, has often seen cases similar to those above described, and he frequently noticed sickness as one of the symptoms. Dr. Laycock alluded to it long ago as a symptom frequent in this, as in all ovarian states, both physiological and morbid.

The pain frequently radiates from the ovarian region, is felt across the loins, and descends towards the thighs and fundament. It is of a dull, dragging, heavy, and sometimes of an overwhelming nature, and distinguished by the patient from other pains resembling colic, and which depend on uterine contractions, although both species may be experienced at the same time. It is likewise to be distinguished from those *superficial* pains which are caused by reflex nervous action, which so frequently accompany every species of disorder of the organs of generation, and are seldom sufficiently acute to induce the patient to seek for advice. She may submit to this pain for years, but should she find it so wearisome to mind and body as to be led to seek advice upon her case, she is frequently treated

for uterine disease. Should the patient be married, connexion awakens and renders more or less acute the pain we have described. Ocular inspection, and an attentive manual examination, however, will often prove that the womb is not tender when touched, or that it does not present any appearance of disease. In sub-acute ovaritis, the hands placed on the iliac regions can sometimes detect an increase of heat; but these symptoms of ovarian inflammation are overlooked, or attributed to disease of the womb, inflammation of its neck, or to that scapegoat of uterine pathologists in England, irritable uterus—a disease regarded as neuralgia by some, as a form of dysmenorrhœa by others, and which, having the same symptoms as sub-acute ovaritis, we suppose sometimes to be one of the legionic names of that disease. The late Dr. Ingleby noticed that the descent of the ovaries on the vagina produced in one of his patients all the symptoms of the disease called irritable uterus.

We have seen pain and swelling of the side coincide with pain and swelling of the corresponding ovary, and this has sometimes aided us to a diagnosis. Should, however, medical advice be asked in cases of sterility, or when tenesmus, a desire of passing water, or an inability to do so, alarm the patient—or else when the bearing-down pains and impossibility to pass the fæces cause the medical attendant to fear stricture of the rectum, then we sometimes discover, by a vaginal exploration, an increase of heat in the upper portion of that passage; but unless the ovaries are considerably swollen, their increase of dimensions may not be detected by this mode of investigation. It may, however, afford an indirect intimation of diseased ovarian action: thus, if one of the ovaries be inflamed, the patient's sufferings are greatly increased by forcibly inclining the neck of the uterus towards it, so as to direct the fundus uteri to the opposite side. The exasperation of the patient's sufferings is then caused by the stretching of the inflamed broad ligament. If both ovaries are inflamed, slight lateral movements, communicated to the uterus by its neck, will greatly increase the pain felt in the ovarian regions. More direct evidence may, however, be obtained by a rectal exploration, for then the finger reaches the ovaries, and finds them more or less painful on pressure, which is not the case when these organs are in their healthy state, supposing a shallow pelvis permits their being attained. They are found to vary from twice to three times their original size.

The most painful sufferings are produced by the descent of the ovarian swelling, of about the size of a small apple, into the recto-vaginal cul-de-sac, thus impeding defecation, or bearing down the uterus, so as to produce its complete retroversion. Such cases have been noted by Boivin, Denman, and M'Intosh. To admit, with Dr. Rigby, that a difference of symptoms depends on whether the anterior or posterior half of the ovary be the seat of the affection—the symptoms of derangement of the bladder being chiefly observed in the former, and those of the rectum in the latter case—seems to us scarcely possible; and we object most emphatically to Dr. Rigby's describing as cases of displacement of the ovary those wherein the displacement is caused by inflammation. In a case related under

this name—*Medical Times*, July 6, 1850—the patient laboured under the peculiar sickening and intolerable pain which sometimes accompanies ovaritis, resembling the intense and peculiar suffering which patients describe when suffering from orchitis. This pain was attended with great throbbing, with a painful sense of forcing or distention of the tender part. The ovary had descended, and it increased in size, was softer than usual, and painful when touched, either through the rectum or the vagina, or by the pressure of the neck of the womb against it. There was a dread of passing fæces, and great pain on doing so. All these are symptoms of sub-acute ovaritis, if such a disease exist; then why call it by a name which merely recals to mind a secondary effect of the disease?

The patient was relieved by blood-letting. She had, it appears, no affection of the neck of the womb, and the offensive aqueous discharge which is noted does not seem to require any other explanation than the morbid stimulus exciting the ovary and its dependent organs.

General symptoms are sometimes absent, but in the more acute cases the local signs of inflammation are accompanied by slight fever at night, thirst, a furred tongue, nausea, and sickness.

The well-known sympathies which, without anatomical connexion, so strongly unite the breasts to the ovario-uterine organs, lead us to expect that ovarian as well as uterine disease would render them painful. Pr. Pistocchi has noted that symptom in two of his cases, and we have done so in five instances. The pain and swelling coincided with the side affected, or existed in both breasts when both were affected; but Dr. Lightfoot has gone too far in considering pain and swelling of the breast as pathogneumonic of ovaritis.

In treating of the causes of ovaritis, we laid peculiar stress on its *psychical* causes, allowing them a greater importance than is usually conceded; but we cannot agree with those who admit the converse, and believe that nymphomania is a symptom of ovaritis; and when we find such an opinion supported by Copland, Carus, Mende, Lowenhardt, and Mme. Boivin, we can only look upon the fact as an additional proof of the strange jumble that has been made of ovarian pathology. We might just as well admit, with Bertrandi, a disciple of Valisnieri, that furor uterinus is the result of the too rapid development of ovarian vesicles, or of there being too many of them formed at once. Doubtless the assertion of the above-named authors rests on facts, but we believe them to be misinterpreted. In Hufeland's case of nymphomania, occurring at the age of seventy in a very virtuous lady, nothing was found on examining the body but a schirrhous—?—state of one of the ovaries. While assenting to our remarks on this subject, the reviewer in the *British and Foreign Quarterly* mentions the case of an aged female who exhibited intense sexual passion, during the prevalence of which she died, and "one ovary was found inflamed and evidently four times as large as its fellow." Most of these cases are given without sufficient detail, for we are not told whether the external organs of generation, and the vicinity of the organ of genital gratification—the clitoris—were ex-

amined. We believe that some morbid lesion would have been there found to explain the nymphomania. One of Pr. Pistocchi's patients was an inveterate onanist from childhood, many years before the appearance of ovarian symptoms, which habit we rather consider to have been a cause of ovaritis than its symptom. In the cases that have come within our own observation, far from giving rise to nymphomania, the disease, on the contrary, has had the effect of deadening all sexual feeling; and when ovaritis is more intense, the pain by which it is accompanied is of too alarming a nature to permit sexual intercourse to be received with anything but repugnance.

We have hitherto given a general description of the symptoms of sub-acute ovaritis, as observed by others and ourselves, but the following is the succinct result of the symptoms observed by ourselves in cases of which we have lately kept the notes.

Out of 16 cases we constantly found pain in one or both ovarian regions. The pain being fixed, but sometimes subject to irregular exacerbations, being increased by pressure, by going up and down stairs, by a false step, or by anything that could jar the corresponding limb. It is well to notice that pressure on the ovarian regions did not generally determine pain in the course of the lumbo-abdominal nerves. In 3 cases out of 15 the pain was accompanied by an amount of abdominal swelling discernible to the eye, obscurely felt on pressure on the abdomen, better appreciated by a vaginal examination, and which might have been made certain if a rectal examination had been deemed requisite. In 6 cases there was considerable pain and swelling of the breast corresponding to the side affected, and of both when both sides were diseased. This symptom was most marked in a case which did not occur at a menstrual epoch. In 5 cases hysterical symptoms; in 2 there was numbness and pain in the corresponding limb; in 5 there was slight fever; and with regard to the duration of the disease, it varied from 17 days to several years, the average being 2 or 3 months.

PUERPERAL SUB-ACUTE OVARITIS.

It has been objected that, in admitting this variety, we have unduly sought to magnify the subject; but we believe Dr. Kennedy right in admitting, besides the acute pelvic tumours which may follow parturition, one which insidiously supervenes, often creeping on for days under a mild form, making it necessary to ascertain by repeated pressure on the abdomen of the recent mother whether inflammation menaces.

Neither do we suppose that the ovary is the starting-point of morbid action in all pelvic abscesses, whether acute or sub-acute, but that it is so in some; and we are fully justified in so doing by the softened state of the ovaries at parturition, and the mechanical injuries they are liable to suffer.

"Certainly," says Dr. Meigs, "many of the cases of puerperal metritis and peritonitis commence with pain in the iliac regions, and when the case has proved fatal, dissection has revealed greater ravages in the ovary than elsewhere, and it is by no means rare to find the organ

filled with pus, or converted by the inflammation into a mass of softened tissue." The puerperal variety of sub-acute ovarian inflammation has been so well described by Dr. Doherty, in his able paper —*Dublin Journal*, vol. xxii.—that we shall quote his words:

"The affection to which I now beg to direct attention is stealthy in its nature, and usually makes its approaches so gradually, that for a long time the existence of any local malady may be unknown to the patient herself, who thus permits it to remain unheeded week after week, until it has perhaps laid the foundation of organic changes which it may ultimately be out of our power to remove. To this disease I have heard Dr. Kennedy, to whom I am indebted for my knowledge of it—for I have in vain sought in books its accurate delineation—give the name of secondary inflammation, by which he meant to imply the usually late period of its occurrence, and not that it must necessarily be preceded by a more acute or other morbid process. It is not my intention to deny that the local changes which I am about to detail may result from, or be, as it were, the remnant of, a more intense degree of inflammation; but the fact I wish to demonstrate is, that the appendages of the uterus are liable to become the seat of an inflammation, but feebly announced by symptoms from the very first, and occurring after the period during which the parturient female is usually considered obnoxious to such attacks.

"The history of these cases is generally as follows:—The patient has probably had an easy labour, and her progress has been so favourable, we have ceased our attendance; or if an hospital patient, she has been dismissed on the usual day, free from complaint. Convalescence proceeds uninterruptedly for some days, or even weeks; but after exposure to cold, she is seized with shivering, succeeded by hot skin and quick pulse, and a dull weight about the pelvis. After a few hours the feverishness disappears, and although some uneasiness still remains about the lower part of the abdomen, it is not sufficient to excite any apprehension in her mind, and thus a considerable space of time may pass over. Febrile paroxysms, however, recur at intervals, and at length becoming more frequent, and stiffness and pain being felt on moving the leg of the affected side, she again applies to us for advice.'

By a careful examination, the local disorders already described will be detected; but the ovarian congestion will be more considerable than in the idiopathic variety, and will be accompanied by considerable sero-purulent infiltration of the adjoining cellular tissue, and even of the vagina, which gives to the finger the sensation of a dense brawny substance, particularly in its anterior curve.

TYPES OF OVARIAN INFLAMMATION.

We have described the *common symptoms* of sub-acute ovaritis, but the same morbid lesions are attended with different accessory symptoms in different women, according as they react on a womb more or less excitable, on a nervous system differently prone to respond to irritation, or on fluids, more or less vitiated by the unknown causes of scrofula, &c.

We shall now consider the types of sub-acute ovaritis, premising

that if sometimes we are allowed to guess at their cause, they frequently can only be attributed to some hidden constitutional peculiarity; and we remind our readers that *in whatever we have written on the subject, we have distinctly disclaimed all intention of considering amenorrhœa, dysmenorrhœa, sterility, and hysteria, as being always and only produced by sub-acute ovaritis. They are not its necessary, but its possible symptoms.*

If the ovaries are the principal organs of menstruation, their morbid conditions must influence the menstrual function either by their own power or by that they exert over the womb. We are, therefore, as much right in ascribing in general diseases of menstruation to the ovaries, as physiologists are in ascribing menstruation to them as their function. We think it well to observe so far, because, in most of our classic works on diseases of women, the influence of the *principal organs of menstruation* in producing diseases of menstruation is ignored, and they are almost always ascribed to constitutional peculiarities by some, or by others to inflammation of the neck of the womb.

In supposing that inflammation, when acting on the ovaries, is capable of sometimes determining the diseases of menstruation, we are confirmed by a writer, who observes, that "amenorrhœa, dysmenorrhœa, menorrhagia, are more intelligible as the effects of preexisting inflammation than as the derangements of a function," and the types of ovarian inflammation which we established in a first edition have been assented to by all the authorities by which it was criticised; and with respect to the relative frequency of these types, we concur with a reviewer in the *B. and F. M. C. Journal*, that the menorrhagic type is the most frequent, that the dysmenorrhœic comes next, and that the amenorrhœic is the least common of all.

AMENORRHŒAL TYPE.

We have stated, page 69, that chlorosis generally depends on a deficient reaction of the *ovarian nisus* on the system. This deficiency of action seems to arise from some latent organic imperfection in the ovaries, or on their peculiar power being lessened by the combined agencies of an injudicious hygiene.

But all the authors who have studied this disease admit, with Frank, Wendt, Andral, and others, what they call chlorosis *florida, sthenica,* or *chlorosis fortiorum.* Cullen, Broussais, Brierre de Boismont, and ourselves, have seen chlorosis supervene in the midst of perfect health in consequence of sudden suppression of menstruation, accompanied by phenomena which lead us to admit a high state of ovarian engorgement. Sub-acute ovaritis produces in these cases what an arrest of development produced in the first; and the functions of nutrition, deprived of that stimulus which they derive from the sexual organs, languish, and must be supported by tonics and steel; whilst the ovarian turgescence which occurs, requires to be treated by leeches, blisters, and the other measures recommended. Alluding, no doubt, to cases similar to those we have seen, Dr. Copland says—*Dict.*, p. 841—"The ovaria may be so changed by inflam-

mation as to be incapable of exciting the vascular activity of the uterus, so as to produce the menstrual discharge; but these changes are rather inferred from the history of former disorders than manifested by existing phenomena."

We have seen ovarian inflammation coinciding with chlorosis, which it had probably caused, since it was cured by directing the treatment to the ovaries. In the same way inflammation of the womb often reduces to emaciation those patients by whom the practitioner is consulted for general debility. Lately, Dr. Martin Duncan —*Provin. Med. and Surg. Jour.*, Oct., 1849—has expressed views so similar to ours, that we are pleased to make use of his words:—"The propriety of attending seriously to the symptoms of congestion of one or of both ovaries, as rendered evident by thrilling pain a little above the centre of Poupart's ligament, accompanied by tenderness on pressure, and increased by the erect posture, ought to be strongly insisted upon. Whether the pain be constant or intermittent, returning at, or exacerbated during the monthly crisis, accompanied by menorrhagia, or coexisting with amenorrhœa and chlorosis, it should receive our urgent consideration; for when an organ has been congested for any length of time, such a state is difficult of eradication—morbid changes rapidly occur, and irremediable mischief results. Theoretical as well as practical data lead us to suppose that ovarian disease may be prevented by the timely exhibition of constitutional remedies, and local applications."

MENORRHAGIC TYPE.

In profuse as in suppressed menstruation the ovaries are often the principal organs affected; the womb suffers, no doubt, but "suffers by consent."

It is impossible to say why certain cases of sub-acute ovaritis should be attended by scanty menstruation, while in others it is accompanied by its profuse flow; but that the same cause should produce different effects, according as it is modified by other circumstances, is a truism. Menorrhagia has been met with, generally speaking, in women of an irritable, nervous constitution. Mr. Elkington, Chereau, and others, have exemplified this type. Dr. Martin Duncan informs us that he frequently meets with it. We have found such cases very tedious and obstinate, until the ovarian disease was attacked by the remedies we are about to recommend.

Such cases had not escaped the attention of other observers. Lisfranc—*Clin. Chyr.*, vol. ii., p. 353—gives a case in which chronic inflammation of the right ovary kept up for two years passive menorrhagia. Many hæmostatic remedies were uselessly given, but the flow diminished under the influence of steel, and Brierre de Boismont even goes so far as to establish as a rule that chronic ovarian inflammation generally causes chronic menorrhagia.

A case of this disease was published by Dr. Rigby—*Med. Times*, 15th Feb., 1845:

Case 35.—" Ever since the first commencement of menstruation, Mrs. L. has suffered from severe dysmenorrhœa, produced by a long closed state of the os uteri; the result of which has been accumulation of menstrual fluid in the uterus at these periods, which was only able to expel it after severe and painful contractions. For nearly thirty years of her life has this source of suffering and severe uterine irritation continued, until the left ovary has ultimately become inflamed and enlarged. It has thus formed a considerable mass, pressing upon the uterus and rectum, and thereby obstructing a free return of blood from these organs; the consequence of which has been menorrhagia to a most severe extent for the last few years, seriously breaking up the general health. There are no traces of uterine disease.

" By the use of antimonial ointment to the left groin, and by leeches to that part of the rectum against which the swollen ovary projects, I have succeeded in diminishing the lancinating pains in the left groin, the sense of distention and pressure in the pelvis, particularly upon the rectum, and the profuseness of the menstrual discharge, the last appearance of which was *without coagula.* The ovary, as felt *per rectum,* is less painful, softer, smaller, and less throbbing. Previously to the last menstrual period, I gently dilated the os uteri, in order to facilitate the discharge of the catamenia. The system is very irritable; slight opiates and purgatives are apt to produce over-effects. My practice has been simply to regulate and improve the general health, and to keep up a gentle action by antimonial ointment upon the left side.

" Within the last few weeks I have had again an opportunity of seeing my patient, during a short visit to London. Her appearance is remarkably altered for the better. She has grown robust, has a good colour; is able to take active exercise, and is enjoying a state of health to which, for a large portion of her life, she had been an entire stranger. She has lost all former symptoms, even the pain in the left hypogastrium. There has been no return of menorrhagia."

DYSMENORRHŒAL TYPE.

The frequent dependence of painful menstruation on sub-acute ovaritis has been admitted by Drs. Oldham, Ashwell, Coley, and others too numerous to recount.

In addition to the symptoms before described, the intensity of the pain becomes most distressing, and it frequently commences several days before the impeded menstrual flow, showing that the pain does not depend on its arrest, but on the menstrual process taking place while the ovaries were subject to morbid action. This assertion is confirmed by Dr. Ashwell, who says: " Dull and heavy pains in the region of the ovaries, lasting for months, are the consequence of their chronic—sub-acute—inflammation. I mention the circumstance, because they are too often regarded as neuralgic, and treated accordingly, painful menstruation and sterility being their results. If any constitution is more liable than another to this termination, it is also

the lymphatic, or that which coincides with a marked predisposition to scrofula."

The action of sub-acute ovaritis in the production of dysmenorrhœa is twofold.

1. Sub-acute ovaritis may of itself produce dysmenorrhœa, as a simple result of the process of morbid ovulation, and not by the agency of any appreciable inflammation of the womb, or of its neck, and without any appearance of false membrane in the catamenia. This is what we have seen, and believe to be frequent.

2. Ovaritis, as Dr. Oldham has well shown, often causes dysmenorrhœa by determining hypertrophy of the uterus, inflammation of its neck, and a diptheritic exudation from its mucous surface. We know that the ovaries, in virtue of their governing influence over the uterus, induce periodically a state of vascular turgescence in the walls of this organ; and it is not surprising to find that ovaritis frequently induces the exaggeration of this physiological state, or the inflammation of the inner surface of the womb and of its neck; thereby transforming the thin, transparent mucous membrane of the womb into a thick, soft cribriform membrane, and producing the retention or painful excretion of the catamenia, which are mingled with pseudo-decidual membranes. Dr. Oldham observes:

"The uterine decidua is formed under the influence of an action going on in the ovary, so the membranous dysmenorrhœa is not primarily an affection of the womb, but of the ovary. In healthy menstruation the congestion of the ovary, the engorgement of the womb, the opening of the veins on the surface of the cavity of the womb, and the flux of blood, are all in harmony, the latter being, so to speak, the resolution of the former. But when the ovaries are unduly excited, as, for instance, from the prevalence of one or more of the numerous ways in which sexual feelings may influence them, then the uterine glands sympathetically enlarge, the lining membrane of the womb becomes raised, and the body of the womb swells out. This change in the mucous membrane goes on during the interval between the monthly periods, and when the flow begins, the new formation is cast off, and the uterus, in the act of detaching and expelling it, becomes the seat of very painful contractions."—*London Medical Gazette*, Dec. 4, 1846.

We are of opinion that Dr. Bennet has rather relied on his memory than on written notes, when he asserts that "nearly all the cases of dysmenorrhœa in the unmarried female which have come under my notice, have proved to depend upon inflammation and ulceration of the neck of the womb."

HYSTERICAL TYPE.

Having seen how frequently hysteria is caused by functional disorders of the ovario-uterine organs, or by their undue influence over a female organism wherein the nervous and sanguineous systems are not properly balanced, it remains to be shown that hysteria is frequently a symptom of the inflammatory affections of the ovario-uterine apparatus. Out of 67 cases of hysteria, wherein a *post-*

mortem examination was made—says Landouzy—morbid lesions of the genital organs were found in 55; and those who see much of disease in women know well that when inflammatory affections of the neck of the womb, or sub-acute ovaritis, are cured, in the majority of cases hysterical symptoms suddenly cease. To impress this conviction on the minds of those beginning practice, we shall adduce other testimony in support of our assertion.

Given a nervous, irritable disposition, and the laborious elaboration and elimination of the first ovule, or the morbid monthly repetition of the same function, the delay or the denial of the proper ovarian stimulus, and sometimes even its enjoyment—we shall find that hysteria is either dependent on sub-acute ovaritis, or on ovarian irritation determined by some uterine lesion.

This theory of hysteria was first professed by Hippocrates; for in referring the disease to the womb, he referred to the generative organs of woman as they were then known. A more perfect knowledge of the physiology of generation has shown that these symptoms cannot be altogether attributed to the uterus.

The older writers, J. N. Binniger, Bonnet, Lieutaud, Riolan, Riviere, and Vesalius, have noticed morbid lesions of the ovaria in those who were much afflicted with hysteria, or who died after unsatisfied desires, whose ovaria were found more voluminous, and infiltrated with a sero-viscus matter, termed by them spermatic, on account of the physiological opinions then current respecting the testes muliebrum, as they were then called. Morgagni—*Epis. Anat.* 45—says that he considers hysteria to depend upon irritation arising from the ovaria and uterus. Rullier and Mr. Whitehead have each of them particularly described the swollen, congested state of the ovaries in cases wherein patients were rapidly carried off by violent hysterical fits; and Negrier asserts that evident hysterical symptoms have been observed in all whose ovaries, on *post-mortem* examination, were found distended and injected. He even supposes that the over-distention of the membranous envelope of the ovaria, and the compression of their nerves, might, by reacting on the adjoining nervous plexus, produce the symptoms of hysteria. This is perhaps taking too mechanical a view of the disease; but we cannot help remarking that something analogous has been observed, in man, by Lallemand, Ricord, and Deville, in those cases of inflamed testicle wherein the rupture of the seminal vessels, by tubercles or pus, gave rise to delirium. We are able to support these views on hysteria by appealing to the authority of Frank, Copland, Columbat, and others, who admit, in their monumental works, that there is a relation of cause and effect between certain mild forms of ovaritis and hysteria—a fact which seems to have been misinterpreted by Dr. Copland when he states, in another part of his work, that hysteria may also give rise to congestion and inflammation of the uterus and ovaries.

Morgagni gives a good example of this type—*Epist.* 45:

Case 36.—A prostitute, aged 40, was so nervous and hysterical that, on the slightest cause, she would tremble and faint. One morning she complained of feeling the womb moving about within her, of

strangulation, and she suddenly died. Morgagni and Santorini opened the body before it was cold, and found no lesion to explain death. Whether or not the patient was at a menstrual epoch they could not ascertain, but on pressure blood transuded from the neck of the womb, which appeared inflamed. The Fallopian tubes contained white mucus, and their uterine extremities were obliterated, for, on insufflating them, the air did not pass into the womb. Both ovaries were hypertrophied, their cells were full of serum, and one was filled with pus.

"I was particularly struck," says Morgagni, "in examining the broad ligaments, by the elegant tracery of the nerves and vessels, and as these nerves were larger than I had ever before seen them, I said to Santorini, 'There are the nerves and vessels which I have mentioned in the *Adversaria,* and which I have promised to describe at some later time.'"

These nerves were larger than usual, because they had been often tormented by ovarian irritation, and, by acting on the brain and through these nerves, ovaritis may have caused hysteria. "You will, perhaps, say," adds Morgagni, "that greater lesions of the womb and ovaries are often found in women who have not suffered from hysteria. True, but all morbid lesions do not produce the same symptoms, all nerves are not equally susceptible of morbid influences, all women do not like the subject of these remarks—shake and tremble at the slightest cause." On this point Dr. Meigs says:

"I have met with many samples of very distressing pain and tenderness in the region of the organ connected with painful and hysterical menstruation, I, therefore, deemed I had good cause to suppose the ovaries were actually in a state fit to be called ovaritis."

In an interesting case from the practice of the well known Louis—*Gaz. Méd. de Paris,* 1846, p. 312—hemiplegia had supervened on protracted hysteria, but, on making a *post-mortem* examination, the nervous centres were found without any lesion, but the ovaries were swollen, lardaceous, covered with false membranes, the Fallopian tubes were inflamed and full of pus, a quart of which was found in the abdomen. The womb was healthy.

In another case, lately published by Professor Piorry, death occurred suddenly, in the midst of an hysterical fit, during the course of intermittent fever; on *post-mortem* examination the brain was healthy, so was the womb, but both ovaria were double their usual size, studded with blood clots.

Hysteria may be a prominent symptom of acute ovaritis, as in the following case, related by Dr. Bright—*Lancet,* July 22, 1848:

CASE 37.—In May, 1847, I was consulted for a young unmarried person, aged nineteen, who had fallen down stairs a few days before—three days after menstruation. Of robust, well-developed frame, she was previously in the enjoyment of good health, with the exception of occasional hysterical attacks, and had been menstruating regularly for five years. After her fall she complained of great pain in the lower part of the back, and on the second day was seized with violent convulsive hysteria.

I saw her on the third day, and found her in a semi-comatose state. The pulse was quick, the skin hot, the left side of the thorax and abdomen, and especially the lumbar region, were acutely sensitive to the touch. She had also frequent hysterical convulsions. Fearing some injury to the spine from the fall, I applied sixteen leeches to the lumbar region, which bled profusely. An active cathartic was administered, and the hysteria treated by large doses of opium. Under the influence of these means the hysterical symptoms rapidly gave way, leaving behind them, however, great abdominal pain, especially on the left side; an evident swelling in the left ovarian region, where the pain was greatest, and a general febrile state. I suspected the possible existence of phlegmonous inflammatory disease of the lateral ligament; but not feeling warranted in proposing a digital examination, I merely persisted in general antiphlogistic measures, directing, however, the attention of both attendants and patient to the dejecta. On the tenth day, about four ounces of pus were voided along with a motion.

On examining digitally, I found at once *a small, indurated, painful tumour on the left side of the uterus.* She rallied rapidly, and soon became quite convalescent. At the next monthly period, however, she had a severe relapse, and notwithstanding leeches, cathartics, &c., matter again formed, and this time found a vent by the vagina. At the three following monthly periods she had relapses, although gradually less severe. When I saw her, many months afterwards, she was yet an invalid. On examination, no trace of the inflammatory tumour could be found, but there was still great local tenderness.

This is an exceptional case, for it may be admitted, as a rule, that hysteria is a symptom of sub-acute ovaritis, of slight uterine lesions, or of the early stages in the development of chronic ovarian tumours, and that this hysteria subsides when the ovarian affection becomes acute, uterine disorganisation very extensive, and when ovarian tumours have increased. Morgagni had already observed the subsidence of hysteria when uterine tumour become apparent.

We consider the hysterical type as of more frequent occurrence than the preceding. It is one susceptible of being easily detected, as in a case we were lately consulted upon by Mr. Nunn, and it is to be deplored that it should be so strongly rooted in the professional mind, that hysteria is a purely nervous affection natural to educated woman. If, on the contrary, we were fully convinced that in the majority of cases hysteria is produced by organic or functional ovarian lesions, a radical cure would be more frequently the result of careful local treatment, in addition to empirical remedies, hygienic appliances, and moral influence. With respect to the connexion existing between insanity and morbid lesions of the ovario-uterine organs, we submit that the cerebral symptoms of hysteria are but a mild form of insanity, and that it is not more surprising to find insanity or psychical derangement produced by morbid lesions of the generative organs, than to find psychical causes producing functional or organic lesions of the genital organs, of which we have given in-

controvertible evidence. Dissecting the body of a young prostitute, who, after amenorrhœa had lasted four months, became an hysterical maniac, and died in general convulsions, Morgagni found nothing to explain these symptoms, but the ovaries were white, hard, schirrhous, larger than usual, and of their usual weight, lying behind the uterus, from the internal surface of which rose protuberances like warts; on being pressed, a white thick matter escaped.

On this point, Dr. J. Conolly thus expresses himself—*Croonian Lectures*, *Lancet*, Nov. 10, 1849:

" Bodily disease gives evident origin to mental delusions in many instances. Women of various ages, either at the monthly periods or on the cessation of the catamenia, and when labouring under some irritation or disease of the uterus or ovaries, are liable to imagine that an actual fire exists within them, that Satan has dominion over them, or that a deluge of flames is descending upon them. The mental symptoms ordinarily give way to treatment directed to assuage the bodily ailment. In one case, where an elderly patient had for some time attributed a fixed pain in the back to her having been seized there by the gripe of the devil, at one particular period of her life, the patient was fully relieved both from the pain and the demonomania by the application of several leeches to the seat of the pain. For reasons which may be readily imagined, an irritable condition of the uterus often leads to melancholy, to self-accusations, to religious despair, and to a suicidal propensity."

Dr. Davey assures us that out of 200 *post-mortem* examinations of insane women at Hanwell, of which he has taken notes, the uterus was seldom affected, while the ovaries generally presented signs of lesion. This would, of course, require both explanation and confirmation, and we place it here as a hint to those who are now investigating the phenomena of insanity, observing, also, that the assertion of Dr. Davey seems to derive confirmation from a statement made in one of the reports of the New York State Lunatic Asylum, that many patients are attacked with insanity after long-continued menorrhagia.

Such are the facts and deductions which make us believe, not that sub-acute ovaritis produces hysteria or insanity *per se*, but that, by a suggestive influence which it exerts over the cerebro-spinal system, it determines in some, hysteria, or convulsions—in others, insanity; and we fully agree with the propositions appended by Dr. Lever to two cases illustrative of the preceding observations—*Guy's Hospital Reports*, 2nd Series, vol. ii., p. 32:

I. Mania, developing itself in the female, is sometimes associated with, and depends upon, organic disease and irritation of the sexual organs.

II. Unless remedial measures are applied to these diseased organs, the insanity will be permanent.

III. In most cases there is a diminution or suppression of the menses.

CHAPTER XVII.

TERMINATIONS OF SUB-ACUTE OVARITIS.

Sterility generally depends on morbid conditions of the ovary.

Sterility.—Physiologists now believe with Meckel, that "the ovary is the workshop of generation." Pathologists will not deny that the cause of sterility is to be first sought in structural modifications of the ovarian tissue. Hufeland, Neumann, Mme. Boivin, and others, have arrived at the conclusion that "Sterility generally depends upon a morbid state of the ovary, slowly and insidiously developed, and giving origin to other ovarian diseases." If such was the belief of men of great experience before the functions of the ovary had been made clear by modern physiologists, we may be permitted to condemn those who, blindly following the routine of olden time, seek for the cause of sterility in the womb alone, and consider themselves justified, by slight uterine lesions, sometimes the secondary effects of other affections, to treat the patient by means capable of endangering life. In proof of our assertion, and as an authentic representation of many similar cases, which still remain unpublished, we shall lay before the reader, in a condensed form, the revelations made to the profession by Dr. Oldham—*Guy's Hospital Reports*, October, 1849:

Case 38.—A lady came from Jamaica to London. She was quite well; but she had been told by her medical attendant in Jamaica that if she placed herself in the hands of some of the eminent London practitioners, her marriage might become fruitful. She did so; and a London obstetric physician, believing, with the Jamaica practitioner, that the opening of the womb was not sufficiently large, slit it up with a cutting instrument. The lady was then condemned to wear, amidst atrocious sufferings, the uterine stem-pessary. Acute peritonitis was brought on by this treatment, and the patient died. Dr. Golding Bird, who had been incidentally called in, gave the history of the case to Dr. Oldham, and requested him to open the body. Death had been caused by acute peritonitis. We give the *post-mortem* appearances of the uterus and appendages, as examined by Dr. Oldham:—"The uterus had been opened by a single oblique division of the anterior wall, directed from the cervix to the left

angle of the womb. The uterus was larger than usual for the virgin; it was rounded on its anterior surface, and there was a bulging convexity of the posterior wall, which, with the general softness of the tissue, showed it to have been the seat of recent engorgement. The blood-vessels over the entire surface of the uterus and appendages were injected with blood, especially the fimbriated extremity of the tubes, the ovaries, the broad and round ligaments. On the anterior surface of the body of the uterus were two small projecting fibrous tumours, the size of a large and small pea; the serous investment of them was highly vascular, the blood-vessels rising over them just like the calyx of the ovarian ovum of the bird. There was a similar more flattened growth in the posterior wall. The divided surface of the anterior wall showed its proper structure to be much enlarged (it measured in the body eight lines); the muscular structure was soft, and the veins large—a probe easily ran through them. The length of the united cavities was two inches ten lines, the canal of the cervix being one inch five lines. The mucous membrane of the cavity of the body was soft, slightly raised, and of a vermilion hue. Agitation in the water was sufficient to loosen and separate it. At the os uteri internum there was a zone of highly injected blood-vessels, broken only at one point; the circumference of this aperture was eight lines. The os externum had a clean, smooth edge, without any break or mark of division; its circumference measured one inch one line. The cervix had its characteristic markings, and the glands were empty of mucus. On the right side of the divided cervix, which would have formed the front wall, the ribbings were stretched upwards, enlarging the mesh-like appearance, and towards the os internum some were lacerated transversely, and from this to the os externum the structure was more ragged than usual. *The right tube.*—The extremity of this tube was almost entirely closed as a congenital formation, the aperture being very small. When opened, the fimbriated end showed its characteristic rich folds of mucous membranes, which were much injected, and were covered with bloody mucus. The remaining two-thirds of the tube were apparently healthy—not vascular and pervious throughout. The right ovary, which was almost covered with lymph, was soft and large. There was a cyst, large enough to hold a small nut, on the uterine end of the ovary. The stroma was gorged with blood. There was only one puckered Graafian follicle; the surface of the ovary was thick and corrugated. The left ovary was irregular in its shape, a projecting mammillary portion coming out from its outer end. This, on being cut into, was hard and vascular, like the commencement of malignant disease; the ovarian tunic was thick and wrinkled, the stroma vascular, a few remains of Graafian vesicles, with puckered tunics, and some clots of different colours, black and brownish. The left tube vascular at its fimbriæ, healthy in its mucous membrane, and its canal pervious throughout. This tube passed into the uterus more directly than its fellow, which was more curved. The veins healthy, arteries healthy, the right round ligament large and vascular, vagina healthy.

"This case affords," says Dr. Oldham, "a most instructive example of the dangerous effects of dilatation, even in experienced hands, and the great caution with which it should be undertaken. It shows, too, the difficulty of detecting the cause of sterility. In this case, I am sure there was no kind of morbid contraction, and that the os and cervix uteri, which were alone treated, had nothing whatever to do with the dysmenorrhœa or sterility, which were, doubtless, dependent on the atrophy of the ovary; and the congenital obliteration of the end of the right tube would have been sufficient to exclude the corresponding ovary from any share in the function of reproduction."

How does sub-acute ovaritis produce sterility? 1, by promoting the imperfect development of ova; 2, by the retention of blighted ova; 3, by peritonitis, which impedes their transmission from the ovaries to the uterus; 4, by inducing abortion; 5, by determining uterine inflammation.

I. We are sometimes consulted by delicate females lately married, who present all the *common* symptoms of sub-acute ovaritis, but in whom menstruation returns every three weeks, or even every fortnight; cases of what have been called *remittent* menstruation, wherein the recovery from one menstrual epoch is almost immediately followed by the recommencement of the same process.

Does sub-acute ovaritis, in such cases, accelerate the development of imperfectly-developed ova? In other words, does the ovule perish by *ovarian* abortion in the beginning of its career, in the same way that it might perish, at a later period of its existence, by *uterine* abortion? In asserting that this is *possible*, we must remind the reader, that however much the relation of effect and cause between ovulation and menstruation has acquired strength from *post-mortem* examinations, which ever and anon appear in medical journals, still none have proved that remittent menstruation coincides with ovulation.

II. The morbid conditions described as those of sub-acute ovaritis seem to be incompatible with the healthy secretion of ovules, and when this is coupled with the assertion of Pistocchi, "that several married women, who had borne children, ceased breeding after inflammation of both ovaries," and the previous statement of Professor Richerand, that generally young women who complain of sterility have suffered from previous attacks of "*inflammation of the bowels*," the name under which ovarian and uterine affections used to be spoken of, we think it may be inferred that sterility may depend on the blighting of the ovula. Such is the interpretation which we propose for the following case:

Case 39.—Dr. Vinen, of Bayswater, requested us to see a patient of his, in September, 1849. Mrs. L. was then twenty-eight years of age, with a pale complexion, middling stature, dark hair, and hazel eyes. She had first menstruated at twenty, but was always irregular both as to time and quantity, it being sometimes scanty, at others very profuse. Since marriage the function had become more regular, but was very variable in amount.

In the previous January she complained of acute pain in the right

ovarian region. Two months after, consulting Dr. Vinen, he discovered a distinct swelling in that region, and, some weeks after, the same appeared on the left side, accompanied by great tenderness at all times, but particularly at the menstrual epoch. The catamenia then became more scanty, darker, and more painful than usual. There was dorsal pain and slight leucorrhœa. Twelve leeches had been applied, with but little benefit, but blisters had been more efficacious. When we saw the patient she was exhausted by continued suffering, and was at times affected with hysteria. Menstruation had not appeared for the last two months. Digital examination was painful both to the vagina and to the womb, which was somewhat swollen; there was acute pain on pressing in the direction of the ovaries, the right one being still swollen; both breasts were very painful. We ordered the treatment previously described.

On the 1st of August the patient was better; examination was no longer painful; pressure in the ovarian regions was less so; the womb was neither swollen nor painful, neither did it present any lesion when examined through the speculum. In addition to the previous treatment, we ordered cold-water injections to be made twice a day, per rectum, and twice a day a vaginal injection of two drachms of tincture of hyoscyamus in half a pint of tepid water.

The patient rapidly improved, lost all pains, and became stronger. She has had no relapse, but, although married several years, has never been pregnant.

The blighting of the impregnated ova while they are still contained in the Graafian follicle cannot be denied. De Graaf pointed out this possible fate of the human germ, its disease, adhesion, and absorption, in the midst of the inflammatory action, and a proof may be seen in the case related by Sir Everard Home—*Phil. Trans.*, vol. cxi., p. 107:—" The most careful dissection satisfactorily proved that the tumour—a fœtus of about four months' growth—was covered, not by the peritoneum, but by the coats of the ovary itself; in proof of which, fragments of the *corpus luteum* were seen on the coats of the ovum. From the adhesion of the membranes of the ovum to the corpus luteum, Sir Everard Home inferred that inflammatory action had supervened and led to the detention of the ovum in the ovarium."

Pouchet and Meigs admit that the ovule being retained within the capsule by the granular retinacula, might be the subject of impregnation by sperm brought to it in the fimbria of the tube.

" Let us suppose," says Dr. Meigs, " impregnation to have been effected, then some change of position covering the porule with a peritoneal superficies permiting of adhesion, the ovulum would be necessarily shut up in the crypt or cell, which, having now become again a shut sac, development of the germ would go on absolutely in the interior of the ovulum."

The impeding of the transmission of the ovules from the ovaries to the womb is a cause of sterility which has struck many observers.

III. Peritonitis.—" *On peritonitis as a cause of functional derangement of the organs covered by the peritoneum* " would be a useful subject

for a prize essay. Much as it has occupied the attention of pathologists, peritonitis is still a wide and very practical field of inquiry. Merely considering the generative system of organs, and leaving out of the question puerperal affections, we have already seen how extensive is the part played by peritonitis in the pathology of these organs.

Local peritonitis is announced by the usual symptoms of the disease; but the pseudo-membranous deposits by which it is followed —of slight importance in other parts of the abdomen—seriously interfere with the functions of generation when they extend over the ovaria, the oviducts, and the uterus.

To quote but one of numerous authorities, Sir R. Carswell bears witness to the frequency of incontestable proofs of inflammation:

" The adhesions which form between the uterus, Fallopian tubes, and ovaries, and the surrounding parts, are much more productive of serious effects than in any other region of the body; and in order to give additional importance to the study of them, I may observe that they are a not unfrequent, and certainly one of the most obvious causes of sterility. They produce, according to their situation and mode of attachment, either anteversion or retroversion of the uterus; they fix the Fallopian tubes in situations in which the fimbriated extremities cannot reach the ovaries, or they envelop the fimbriated extremities in such a manner as to render them quite impervious— which is always the cause of dropsy of these tubes—or, lastly, they cover the ovaries so completely that impregnation is rendered impossible."

It is self-evident that although the Fallopian tubes be bound down, the ovaries, if healthy, still proceed with their special function, ovulation. Therefore, an ovum is repeatedly detached from its ovarian cell, from its *matrix superior*, as Fabricius de Aquapendente justly calls it, and, accompanied by a certain amount of sero-sanguinolent fluid, which is the lochia of the ovarian nidus, it falls into the peritoneal cavity.

In a previous edition we considered this effusion of menstrual blood into the peritoneum to be sometimes a cause of dysmenorrhœa. We presumed that it might cause local peritonitis. The *post-mortem* appearances detailed by other observers now permit us to prove our assertion, but the consideration of the sanguineous pelvic tumours require to be considered in connexion with other pelvic tumours.

With respect to the womb, adhesions in its vicinity are of little importance so long as it is unimpregnated; but should gestation occur, it will be attended by more than ordinary pain. When adhesions are slight, they doubtless can expand, or be torn asunder, which may explain some of the sufferings of women after miscarriage in early pregnancy, but if the adhesions cannot be overcome, the ovum will be prematurely cast off. The same cause may give rise to a succession of abortions, which will also entail a more than usual amount of suffering. Mme. Boivin has, in a special manner, called attention to this cause of abortion; and Dr. Lever has also given apt illustrations of its importance in his valuable contributions to the *Guy's Hospital Reports*.

Dr. Mercier has published cases to show that local peritonitis occurs oftener than is generally supposed, and is transmitted by continuity from the womb by the Fallopian tubes; thereby explaining the frequency of sterility in prostitutes, amongst whom, says Parent-Duchatelet—Tom. i., p. 230—scarcely six accouchements per thousand take place in the course of the year. We must also observe, that many women are sterile from this cause, although they are not considered to be so, because they have previously borne children.

Professor Rostan states—*Gaz. des Hôpitaux*, April 9, 1850—that if some consider that iliac abscesses most frequently end by resolution, it is because they confound an iliac abscess with partial peritonitis, which is of frequent occurrence, and is generally terminated by resolution. Dr. Oldham likewise admits pelvic peritonitis to be a frequent cause of much of the pain and habitual sufferings of women during their menstrual periods.

Dusourd gives the case of a woman who, being in good health, washed in cold water on the second day of the menstrual flow, which was suddenly suppressed; nervous symptoms and fever soon came on; the legs and thighs swelled, and the patient died of peritonitis the fourth day after the suppression of the menstrual flow.

Gendrin—*Histoire des Inflammations*—relates another case, wherein ovarian irritation evidently originated the fatal disease. A young woman, aged twenty-four, was, on the suppression of menstruation, seized with nausea, vomiting, lumbar and ovarian pains, and cephalalgia. Twenty leeches were applied to the labia; irritating enemata were given, together with stimulating drinks and hot hip-baths, and the patient improved; but in the following month, instead of the physiological process of menstruation, the previous morbid symptoms returned with redoubled energy. Two hundred leeches were applied to the abdomen in the space of five days; and, after lingering for a month, the patient died. On examination, pus and false membranes were found in different parts of the abdomen; there were also perforations of the bladder and colon.

Such cases permit us to understand how, in one London hospital, St. George's, where the *post-mortem* appearances are noted with a praiseworthy care, the medical practice, in 1850, afforded four instances of idiopathic peritonitis; in young women of twenty, twenty-one, and twenty-four years of age. There is also a form of peritonitis to which women are more subject than men, in which bridles of lymph are so attached as to bind the intestine, and produce fatal incarceration. Why should such bridles be more frequent in the vicinity of the ovaria? We will answer this question as we found it answered in the *London Medical Gazette*, by an eminent pathologist, Dr. Renaud, of Manchester:

Case 40.—"Sarah A. S., twenty-one years of age, and a single woman, was exposed to cold ten days previously to her death. This exposure was followed by pains in the abdomen and constipation. Five days from this, sickness and tympanitic distention of the bowels came on. Over the umbilical region there was slight pain on pressure. Pulse 104. In two more days stercoraceous vomitings ensued,

and continued with more or less intensity, until she gradually became comatose and died. For the last seven days of this young woman's illness everything in the way of treatment that could be devised was resorted to, but without producing any result. If medicines did not aggravate the symptoms, they certainly proved quite ineffectual to remove them. From her own account, she had enjoyed good health up to the time of the seizure which ended her existence.

"At a *post-mortem* examination, the abdomen was seen much increased in size from accumulation of solid matters and flatus. There was not any effusion of recent lymph, and but trifling injection of the vessels. The great omentum adhered firmly to the uterus and its appendages, and to the viscera in the pelvis, by numerous firm bands of lymph of old standing. In the right iliac fossa two bands of lymph stretched from the peritoneal surface lining the abdominal walls to the peritoneum covering the ileum, about three inches from the termination of this bowel in the colon. By a contraction of these bands the gut was so far twisted upon itself as to produce a complete stricture—so complete, indeed, that not a drop of water would pass through, even when the bands of lymph had been severed. The long-continued traction had caused a distinct narrowing in the calibre of the gut, which had ended in permanent canalicular obliteration. In this respect the case may be considered a very rare one, and withal instructive, as showing that, although an operation during life may, in the majority of instances, succeed in liberating the gut from its incarcerating band, yet that in every instance such a result is not necessarily associated with integrity of the calibre of the gut itself.

"In connexion, also, with this case, and with cases of a similar nature, pathological anatomy seems to justify a conclusion not hitherto, I believe, fairly put before the profession—viz., that, although internal strangulations or incarcerations of bowel are common to both sexes, yet that the great majority of them happen in women; or, to put the case in other terms, the animal economy in females furnishes an exclusive source of disease to which, from a difference in organisation, males are not, neither can be liable; that, although the result in each sex is the same, yet that the elements of the disease are differently sown, and brought to a culminating point by a train of morbid phenomena that admits of no parallelism. In males, where the strangulating bridles consist of lymph, they must be referred back, for their origin, to one or more *idiopathic* attacks of peritonitis of greater or less intensity. In females, on the contrary, I think my own experience in pathological anatomy, and a perusal of the cases recorded by others, justifies the conclusion that the peritonitis arises in many instances out of a chronic form of congestive irritation to which the generative apparatus within the abdomen is liable. That this long-continued irritation, as manifested directly by pain and throbbing in the region of the ovaries and uterus, and indirectly by lumbar irritation, dysmenorrhœa, crural pains, &c., does frequently advance to local inflammatory action, is sufficiently evident from the bands of lymph that are so frequently seen matting the ova-

ries, broad ligaments, and oviducts, together. If, therefore, folds of bowel or portions of omentum are in contiguous relationship with parts influenced by these morbid actions, it is not contrary to rational pathology to infer that they will partake in a limited degree of the same actions; and, a bond of union being thus morbidly constituted, it only requires time, and the peristaltic action of the bowels, to elongate the lymph into a band which, under accidental circumstances, may prove an incarcerating medium.

"If these premises be allowed, it follows that females have a liability to internal incarceration of bowel, borne out by both pathology and anatomy, over and above that of which males can be the subjects. In another case, bands of old lymph were found freely passing from the uterine organs to different parts of the bowels. In another instance, where two-thirds of the ileum were constricted between two bands of lymph, the origin was at the rectum, immediately behind the uterus. That such persons can only have suffered from what is commonly recognised as uterine irritation, seems clear, from the fact of assertions being over and again made that, up to a certain point, no suspicion of inflammation has been harboured, and no adequate treatment been adopted for its subdual."

Still more recently, Mr. Canton has related that having opened the body of an unfortunate young woman of sixteen, who had lived under the dark arches of the Adelphi, he found the recto-vaginal space occupied by false membranes as firm and numerous as he had ever met with in the pleural cavity. The fimbriated extremities of the Fallopian tubes were intimately united to the ovaries. The appearance of the parts showed that acute local peritonitis had taken place long before death, and except that she had often cohabited with as many as twelve or fourteen persons in one day, nothing could be ascertained respecting the girl. Rokitansky is likewise of opinion that internal constrictions of the intestines are much more frequent in females than in males.

We are able to confirm a remark of Dr. Grisolle relative to the obscurity of diagnosis not unfrequently caused by the consequences of local peritonitis.

Dr. Grisolle remarked, in a clinical lecture, "that, after having published his papers on pelvic abscesses, cases were repeatedly sent to him by men in extensive hospital practice, as instances of iliac abscess, in which there was nothing but an accumulation of false membranes in that region." Such tumours are sometimes sufficiently extensive to deaden sound elicited by percussion, and in proportion as they disappear by absorption, the abdomen resumes its usual resonance.

Ascites. — Forestus has already described dropsy as a consequence of suppressed menstruation, and a case of this kind is given — *Philadelphia Jour. of Med. Sci.*, vol. iv. — where the patient was treated by volatile tincture of guaiacum, and cured by diuresis and diarrhœa, menstruation returning immediately after.

Dr. Martin Duncan, of Colchester, thinks that the ovaries sometimes relieve themselves from congestion, by pouring out a morbid amount of ascitic fluid; and we cannot better explain his views, than

by giving his remarks on a case which he has recorded—*Prov. Med. and Surg. Jour.*, Oct., 1848 :

"I believe it is very rare for the operation of paracentesis abdominis to be anything more than a palliative measure. In this case, it was clearly the means by which the ascites was cured; but it is evident that the success was determined by the cause of the serous effusion. There were no symptoms of renal disease, and the previous history and the general appearance contradicted all ideas tending to the probability of there being any obstacle to the passage of blood through the liver. There were no symptoms of general peritonitis, but pain over the situation of the left ovary existed, with deficiency of the menstrual flux previously to the appearance of any abdominal swelling. Such symptoms are common enough, are to be referred to congestion of the ovary, and are usually relieved by the discharge of the monthly flux, the congestion being hardly abnormal. In this case I take it, that instead of the congestion being relieved by the discharge from the mucous surface of the uterus, the peritoneal covering of the ovary took on an unusual function—serum transuded into the general peritoneal cavity, and relieved the tension of the vessels in its immediate neighbourhood. At each monthly period, for some time, fresh effusion occurred, the general loss of tone of the system preventing its total re-absorption ; by-and-by the effusion increased to such a degree, by successive depositions, that the chances of its absorption by the means usually employed by nature became much diminished ; and powerful drastics, diuretics, and diaphoretics, although given for months, hardly prevented further accumulation. All now depended upon the diagnosis, for if the above view of the case happened to be correct, paracentesis might be recommended, and a good prospect of cure held out; but if the fluctuation depended upon the presence of fluid in a diseased ovary, although the operation might relieve, no benefit would permanently accrue from it. The commencement of the disease with pain in one side, accompanied by more or less tremor, and the general state of the health, tended to the idea of the dropsy being a cause, but occasionally the drum-like sound of intestine could be heard, by carefully percussing above the umbilicus ; and when she had reclined on one side for some time, it became evident over the other. The idea of there being a collection of fluid within a cyst was then hardly tenable. The operation was decided upon, and performed with a successful result; and the general health being improved by good diet and country air, the peritoneal surface of the ovary no longer relieved the hyperæmic condition of the organ, the uterus took on its proper function, and speedy restoration to health supervened."

The views of Dr. Martin Duncan are confirmed by the following case:

A patient, aged forty-six, was received at the *Hôpital St. Antoine.* Menstruation had been habitually regular; she was a mother at twenty-one years of age, and had enjoyed good health. While taking a warm bath, to promote the menstrual flow, it ceased, and did not return. The lower extremities and the abdomen swelled, fluctuation was evident, and equally so whatever position was given to the

patient. Dr. C. Bernard, in relating this case—*Gaz. des Hôp.*, 5th Jan., 1850—gives another, where suppression of menstruation brought on tuberculous peritonitis.

IV. Abortion.—Dr. Granville, Mme. Boivin, many others, and recently Dr. Barnes, admit that abortion is frequently caused by ovaritis or ovarian irritation. It may be so, but we have not met with a sufficient number of cases to permit us to state that the milder forms of ovarian inflammatory action propel the womb to miscarry.

V. Uterine Inflammation.—There has been of late a strange diversity of opinion relative to the structure of the womb. The neck of the womb, in the natural state, has been called *a highly vitalised organ*, an opinion in opposition with that of former observers, and those of our own time. De Graaf says, "that the neck of the womb is harder and whiter than its body;" Rœderer, "that the neck of the womb is hard and white, while its body is grey, and of a softer texture." We agree with these accurate observers, with Lisfranc, and Dr. Forget, &c., believing that the neck of the womb is far from being composed of highly vitalised tissues, for when the whole organ is successfully injected, the body of the womb is found pink with the colour injected, while a section of the neck shows, by its remaining white, with how few vessels it is injected in the ordinary state; but this lowly vitalised structure is covered over by an erectile tissue, the continuation of that which lines the vagina. This erectile tissue is admitted by Dr. Oldham, by Dr. Forget, and has been demonstrated to ourselves by Mr. Quckett on several uteri. Another proof that the neck of the womb in the healthy state is not highly vitalised, is to be found in some experiments of Dr. Duchesne, who has made so many interesting applications of electricity to physiology and therapeutics.

Dr. Duchesne's electrical apparatus is equal in power to 100 piles of Bunsen; and on directing the amount of electricity thus generated to the neck of the unimpregnated womb, no feeling was determined, much less pain. There was a similar absence of sensation when the electrical current was directed to the bladder, but its contractibility was excited. Such is the structure of, and sensibility of, the womb at intermenstrual periods; and the increase of size, and the softened texture of the body and neck of the womb occurring at menstruation, are to be attributed to the healthy stimulus they receive from the ovary.

We have proved that the ovary may be primarily inflamed, and may also transmit a morbid stimulus to its dependent organs, instead of the physiological stimulus which impels the uterus to healthy action. The powerful influence of sub-acute ovaritis, as a great cause of congestion and hardening of the womb, has been shown by Drs. Oldham and Rigby. Under this influence, the uterine surface secretes membranes which, when compared with those cast off in cases of abortion, are found identical; but this is not all, for the texture of the womb becomes altered. In recent congestion, the posterior wall feels soft, compressible, and painful to the touch, but

after repeated engorgements the tissue becomes harder, more solid, very much like the tissue of an *erectile* tumour, or that of a fibrous growth, and at the same time the sensibility of the neck of the womb becomes morbidly increased. It is scarcely necessary for us to observe that, when idiopathically inflamed, the neck of the womb may likewise become the seat of intense sufferings, which radiate to the whole system.

With respect to the influence of sub-acute ovaritis over the womb, we believe that when the former is long continued, the white and solid substance of the neck of the womb and its covering of erectile vascular tissue become hypertrophied, so as to form an *erectile* development of one or both of the lips of the womb, an appellation first given to them on account of their general appearance and character. The following is a case published by Pr. Recamier—*Gaz. des Hôpitaux*, Feb. 12, 1850:

Case 41.—We were consulted by Madame R., who for the last eight years had suffered considerably from ovarian irritation, attended by much pain in the right fossa iliaca. Sexual intercourse also produced intense suffering. Such had in general been the state of the patient's health, though it varied for better or for worse. On examination, we found to the right, a little above the uterus, an inflammatory tumefaction of the right ovary, about the size of a hen's egg, which was very painful, even if touched ever so gently. This tumour was distinctly felt by the double-touch, the left hand pressing on the hypogastric region. There was also considerable erectile swelling of the anterior lip of the os uteri; little fever. We applied leeches to the right inguinal region, ordered poultices, baths, &c., &c. When the ovarian tumefaction was diminished, as there still remained some engorgement of the neck, it was cauterised three or four times, at four days' interval. After seven weeks' treatment, the patient returned home perfectly cured.

One, who by his long experience of difficult cases, and by a life more devoted to the practice than to the literature of his profession, occupies amongst us a position somewhat similar to that lately held in Paris by our lamented friend Pr. Recamier—Dr. Blundell—in his practice at Guy's Hospital used to take into consideration the coincidence of ovarian and uterine disease, and to consider it necessary to attack the inflammation of the ovary by leeches, so as to subdue that of the womb.

His successor in that most noble of London charitable institutions, Dr. Oldham, lately showed us a patient in whom chronic ovaritis had brought on swelling of the womb, a softening of its texture, and a painful state on pressure. The consequence of this, was the descent of the womb into the vagina, the abrasion of epithelium, and subsequent ulceration of the neck of the womb—a condition which is too often considered the only disorder—and in showing us this case, Dr. Oldham said that he had repeatedly seen similar. Dr. Rigby affirms that he has never seen ovarian irritation to exist without coincident derangement of the uterine functions, and Dr. Murphy

has stated that, in several cases of dysmenorrhœa, he failed in relieving the patients while he addressed the whole treatment to the uterine elements of the case—stricture or ulceration of the os uteri—and that it was only after more minute attention, and on finding that in those cases painful menstruation depended on sub-acute ovaritis, that he was able to cure it by appropriate means.

Still, as the translation of inflammatory action from the ovaries to the womb is generally overlooked, we shall exemplify it by cases taken from various authors who wrote before the physiological importance of the ovaries had drawn attention to their pathological conditions, and we shall extract a case from Duparque's classic work on diseases of the womb:

Case 42.—In a woman aged twenty-five, menstruation became scanty, and disappeared, the patient suffering from severe pains in the loins, and in the left ovarian region. On examining her, we detected a very slight engorgement of the left angle and posterior lip of the uterus, but we found a manifest tumour, about the size of a small egg, in the left ovarian region. The tumour was painful, and we thought it ovarian. Venesection, and the application of leeches to the neck of the womb, brought about, in the space of two months, a diminution of the uterine engorgement, but the ovarian tumour still remained the same. As the patient was too weak to bear any further loss of blood, we gave calomel, and ordered mercurial frictions to the inguinal regions, and in two months more she was quite recovered from both affections.

The following case strengthens still more the position we defend. It was taken by Dr. Letalnet, and communicated by him to Dr. Brierre de Boismont. They both believe that the ovaries were primarily inflamed, and that inflammation was thence transmitted to the uterus; but we regret that the state of the ovaries was not minutely examined.

Case 43.—Mdlle. A., aged twenty-one, of a lymphatic temperament, menstruated for the first time, and without pain, when thirteen years of age. At seventeen she was affected with chlorosis; and the diminution of the menstrual discharge which then took place was accompanied with epistaxis. When in her eighteenth year, she felt, for the first time, a pain in the right ovarian region, which augmented at each menstrual epoch; and when the lady was under the influence of cold, hysterico-epileptical fits constantly attended the menstrual flow, which, however, remained regular as to the period. She was afflicted with leucorrhœa, and a fissure of the anus, for which an operation was performed. At the menstrual period, which immediately followed this operation, she suffered considerably, and dysmenorrhœa became more and more considerable. The menstrual discharge, instead of being red, was now brown, then black, and at last ceased altogether to flow. When Dr. Letalnet first saw the patient, the hypogastric region was painful, the uterus was increased in size, heavy, and painful on being touched through the rectum. This uterine congestion was accompanied at all times by pains in the loins, but particularly whenever the menstrual discharge began to flow.

The patient's breath was fœtid, her respiration rapid; she would lose her senses during an hour or two, and afterwards remain in a lethargic state for thirty-six hours.

Notwithstanding the anæmic state of this young lady, bleeding—says Dr. Letalnet—was her only relief. The flow of blood was immediately followed by a decided improvement; and when the menstrual discharge appeared of its own accord, or was solicited by remedial means, the patient was sure to be better in two or three days. It was proved, not once only, but often, that venesection, or leeches to the hypogastric region, brought on the catamenia and epistaxis, and put an end to the hysterical fits. This case is not only interesting as an instance of the passage of inflammation from the ovaries to the uterus, but it also confirms our explanation of hysteria. Impeded or arrested menstruation is followed by hysterico-epileptic fits; but as soon as the menstrual discharge appears, the hysterical symptoms abate or disappear. The sanguineous is no doubt propelled and governed by some nervous currents, the impetus of which is given by the ovaria. When these normal currents are arrested, the blood remains as a morbid stimulus to the generative organs; but the nervous ovarian influence, when reversed, reacts on the cerebro-spinal system, and produces hysteria or a state of intense pseudo-narcotism.

Knowing how easy it is to distort facts by looking at them through the medium of one's own peculiar views, we have hitherto been more anxious to support our views by the cases of other observers than by our own; we shall, however, add the following clinical illustrations:

Case 44.—A married woman, aged twenty-five, was admitted a patient at the Paddington Dispensary for Women and Children. She was small in stature, of a sanguine constitution, and had been married three years without issue. She complained of pains in the abdomen, of a slight discharge, and of dysmenorrhœa, with either a profuse or a scanty flow. On examination, we caused little pain by pressing the ovarian regions. The neck of the womb was sound in every respect. Considering that the general health of the patient was in fault, we gave opening medicine, tonics, and ordered injections with a solution of alum. This treatment was continued several weeks. The general health improved; the discharge almost disappeared; but the pains in the ovarian regions became worse, and dysmenorrhœa increased. We ordered inunctions with mercurial ointment, and poultices to the inguinal regions, and the pain abated. But a fortnight afterwards leucorrhœa reappeared, with pain in the back; and, on a second examination, we found an ulceration of the inner surface of the cervix, which outwardly was red, and swollen.

We therefore admitted having taken a wrong view of the case. It was an ordinary case of ulceration of the neck; so we cauterised it with nitrate of silver—then, with the acid nitrate of mercury—and, lastly, with potassa fusa. Such was the treatment employed during the space of eight months, the patient being sometimes better, at others worse, and sometimes remaining without treatment for the space of three weeks. The ovarian pains likewise varied; but, three

months ago, finding that they were very intense, being augmented by walking, or pressure, and tired by the pertinacity of the case, we made an exploration per anum, and found the ovaries swollen, and very painful when touched. We immediately changed our plan of treatment, and ordered ten leeches to each inguinal region, and the regular rotation of blisters and ointment, besides cold enemata twice a day. The pains subsided, the leucorrhœa stopped, and, a few weeks after, the neck of the womb was merely congested. After the succeeding menstrual period, we ordered a repetition of leeches, blisters, and ointment: and now the cervix is sound, the ovaries are painless, and the patient is well.

In this case, we think that ovaritis produced the inflammation of the neck of the womb, and kept it up until the primary disease was discovered and energetically treated.

Case 45.—Emma W., twenty-two years of age, of middling stature, and with red hair and grey eyes, was admitted to the Paddington Dispensary, July 14, 1851. She menstruated at twelve, and has ever since been regular every month, even during pregnancy, and the ten months she suckled her child. For several months previous to, and since, weaning the child, she has suffered much from pain in both ovarian regions, which pain was always increased by menstruation, by walking, by pressure, by ascending the stairs, or by any sudden jar. Lately, the left ovarian region has become the most painful, and the left breast has been likewise sore, and swollen. For the previous weeks, the legs swelled at night; there is slight leucorrhœa, little fever, and she complains of feeling "heavy for sleep," and would sleep on all day if she were permitted.

On making a digital examination, there was no sign of uterine disease, but pressure directed towards the left ovary was intensely painful. We ordered the following compound camphor mixture:—Solution of potash and tincture of cardamoms, four drachms each; tincture of hyoscyamus, six drachms; camphor mixture, six ounces; a tablespoonful to be taken three times a day, and a small quantity of the following powder to be taken in a little milk at night:—Sulphur, two ounces; biborate of soda, one ounce; while three or four drachms of the following ointment were to be applied, not rubbed, over the lower portion of the abdomen:—Strong mercurial ointment, one ounce; extract of belladonna, two drachms. We then directed a thin linseed poultice to be applied over the anointed surface, and over that a piece of oiled silk, with the understanding that this application was to be removed and re-applied as soon as possible in the morning, at two or three in the afternoon, and before disposing the patient for her night's rest. July 17th.—The patient was better; the pains were only violent at times; there was no leucorrhœa, and the bowels were comfortably moved.

21st.—Ovarian pains were all gone; the mercurial ointment was therefore discontinued.

28th.—We learnt that on the 22nd, after an attack of diarrhœa, menstruation returned ten days before it was due, but unaccompanied by ovarian pains. We prescribed the following pills, to be taken at night:—Sulphate of quinine, one scruple; extract of opium,

five grains; extract of liquorice, a sufficient quantity to make ten pills. But upon leaving, and before this treatment could be begun, menstruation again appeared, and there was a throbbing and swelling of both breasts, and pain referred to the pubis. On making an examination, we found the neck of the womb hot, and swollen; we ordered injections with a solution of acetate of lead, and we returned to the application of the compound mercurial ointment. We saw the patient after the subsequent menstrual period, which was normal as to time, quantity, and pain; the womb was ascertained to be healthy, and the patient was quite recovered.

This case was first one of sub-acute ovaritis, lasting for months, until the increased uterine activity, swelling of the womb, and irregular and prolonged menstruation, necessitated the employment of local measures to remove uterine congestion. The mercurial applications, however, should not have been discontinued on the subsidence of the ovarian pains; for as the womb was in a healthy state on the 14th inst., if they had been continued, the slight attack of uterine disease would have probably been avoided.

If we had not positively ascertained, on the 14th, that the womb was in a healthy state, we should, on finding it slightly diseased, on the 28th, have concluded that the previous pains were to be attributed to the beginning of undiscovered uterine affection, and not to ovaritis, which we believe to have been the primary affection, determining the uterine inflammation in the same way as the physiological congestion of the womb in menstruation.

Case 46.—Sarah H., thirty-two years of age, with black hair, grey eyes, and a Roman cast of countenance, was admitted to the Paddington Dispensary on the 2nd of June, 1851. She first menstruated at fifteen, and has always been regular; but at each period she has suffered from pain in the right leg and thigh. She married at twenty-one. Conception never took place. The last menstrual period came on eight days before it was due, and was attended by a great increase of the pain habitually felt in the leg and thigh. The catamenial flow lasted its usual time, but the pains did not abate on its disappearance, and in addition the patient suffered from constant pain in the right ovarian region, augmented by exertion, by walking, or by pressure. The water was freely passed; the bowels, which were much relaxed during the last epoch, were now confined; there was no leucorrhœa; and a digital examination indicated that the womb was healthy; slight fever; and pressure directed towards the right ovarian region increased the patient's pain. We ordered an antimonial mixture, and the compound mercurial ointment, directing it to be used as in the preceding case; likewise the compound sulphur powder, as in the previous case.

June 4th.—Better in every way: the fever was reduced, the pain less intense, and pressure on the ovarian region determined less pain. The ointment was ordered to be continued, and the compound camphor mixture as prescribed in the first case. A small quantity of carbonate of soda was ordered to be taken in a little cold water after meals, and two compound colocynth pills every other night.

9th.—The patient came limping into the room with tears in her

eyes. The pain in the right thigh had left her, but that in the right ovarian region had returned with more intensity than before. There was difficulty in passing water. On making a digital examination, we found that the womb was lower down than on the 2nd of June, and that its neck was swollen, and painful in its posterior half; no leucorrhœa. The patient was ordered to continue the former treatment, and, in addition, to have, twice a day, as an enema, a cupful of clear starch, in each of which enemata were to be exhibited forty drops of laudanum.

12th.—Four enemata had been administered to the patient, and the pains had disappeared. We subsequently ascertained that at the next period she menstruated after her usual manner.

The painful uterine swelling detected on the 9th of June was certainly secondary to that of the ovary, since, on the 2nd, the womb was found healthy.

Case 47.—Charlotte K. called October 18, 1849. She was about twenty-six years of age; her constitution being lymphatic, but her hair and eyes dark. In childhood she had several abscesses in one of her legs and groin. Menstruation appeared at fourteen, but at sixteen was suspended, from her catching cold; and when it did return it was three-weekly instead of monthly, as before. It was either profuse or scanty, and preceded for a week by great pain in the ovarian regions. Pressure, walking, or stooping, aggravated this pain. This state lasting for several years, had brought dyspepsia, palpitation, hysterical symptoms, and there was often leucorrhœa.

Mr. Pughe, of Aberdovey, in North Wales, considering the case to be one of chronic ovaritis, sent her to us. Digital examination was so painful, that we contented ourselves with having ascertained that the vagina and neck of the womb were swollen, hot, and inflamed. Pressure on the ovarian regions was also very painful. Leeches had been applied to them a fortnight previously, and with great benefit; we therefore ordered twelve more to be applied, prescribing the usual treatment, with the addition of aloes pills, and cold-water injections per rectum.

Oct. 28th.—We were able to make a speculum examination, and ascertained that there was no ulceration of the womb, which we were led to expect from the persistence of many symptoms which usually indicate it. When the finger in the vagina was directed towards either of the ovaries, a sickening pain was determined; and when the left hand was pressed moderately on the ovarian region, so as to compress the mass of intervening tissues between both hands, the pain became intolerable.

This patient was for several months under our care. After each menstrual epoch, six leeches were applied to each ovarian region; when the leech-bites had healed, a blister was applied to the same part; and when these were healed, the same surface was anointed with mercurial ointment until the time when menstruation made its appearance. Feb. 13, 1850.—She was without pain or discharge, and menstruation had assumed its normal type, completely losing the prolonged pains by which it had been accompanied. She returned to Wales quite well.

Such are the terminations of sub-acute ovaritis, as far as we can deduce them from the experience of many authorities combined with our own. If, however, we consult our case-book, it will be seen that, in 15 cases, the terminations we have most frequently met with were, uterine inflammation in 4; remittent menstruation in 4; in 3 deficient menstruation; in 2 amenorrhœa; sterility in 2; bilious plethora in 3. More than one of these terminations being met with in some of the 15 cases.

Our views respecting sub-acute ovaritis have met with general assent, and it seems to us that they throw light upon many of the anomalies of uterine pathology.

It is admitted by all those who have contributed to our knowledge in this department, that one of the characteristic features of diseases of the womb is their exasperating uncertainty. In some of those who suffer extremely, we find but very insignificant lesions; and when we have removed these, the patient sometimes suffers as much as before. Now, we may believe that, in some instances, these symptoms are but a morbid reminiscence in the nerves of the convalescent organ, and that a healthy excitement of the whole system, is all that is wanted to relieve these particular nerves from their undue action, and to merge their morbid independent, into general excitement; but in many other cases of uterine disease, as in those we have related, we cannot cure the disease of the womb, because we forget that beyond the womb, preceding it in the development of the organs of reproduction, and governing them through life, are the ovaries, which often participate in and cause that uterine inflammation which we alone attack; and thus, while we cure the small visible lesion, a hidden one remains, to bring on relapses and to perpetuate the patient's sufferings. In the treatment of those painful states of the neck of the bladder, so often caused by diseases of the kidneys, we depend much less on direct applications to the neck of this viscus than we do on those means by which we can attack the kidney, the diseased organ. Should not we be governed by the same logic in treating diseases of the organs of reproduction?

No better proof of the validity of a doctrine can be had, than when observers in different countries come to the same results; and we were gratified, soon after the publication of our first edition, to find Dr. Nonat—a Paris physician of distinction—in a clinical lecture on inflammation of the lateral ligaments, make the following remarks—*Gaz. des Hôp.*, March 16, 1850:

"Inflammation of the lateral ligaments may exist alone; at other times it may be complicated by metritis, or ulcerations of the neck of the womb, or by granular inflammation of the same—complications which render the diagnosis more difficult, and which have frequently given rise to mistakes. Very often the whole treatment has been directed to these *secondary* lesions, without it being in the least supposed that they owed their origin to inflammation of the broad ligaments. When such uterine lesions are found, it behoves us to ascertain whether the lateral ligaments are not the seat of inflammatory action."

CHAPTER XVIII.

DIAGNOSIS AND PROGNOSIS OF SUB-ACUTE OVARITIS.

"If diseases of the ovaria could be detected in their earliest stages, they might often be cured."—ASTRUC.

THE length to which we have extended our remarks on the symptoms and terminations of sub-acute ovaritis, render it unnecessary to protract this chapter.

Cases similar to those related in the preceding chapters have doubtless been of frequent occurrence, but they have been differently interpreted, according to the state of medical science.

I. Formerly when they were met with, and sometimes even now, particularly when not occurring at the monthly periods, they were confounded with diseases of the womb, and called inflammation of the bowels—a name which will doubtless be considered erroneous, so far as the localisation of the disease is concerned, but which, being correct in the indications of its nature, fortunately often led to antiphlogistic treatment.

II. When cases similar to those we have reported took place at, and in connexion with, the menstrual periods, they were, and are even now, confounded with many other morbid states, under the name of dysmenorrhœa. They are considered to be merely an increase of that pain by which menstruation is usually attended, and generally left without treatment. This we believe to be often detrimental to the patient's health.

III. Some would be inclined to explain our cases by incipient uterine disease, and might be impelled by theory to resort to measures, excellent in uterine, but unnecessary, if not dangerous, in ovarian disease. Being in doubt as to some of the cases which fell under our own observation, a digital examination convinced us that there was no uterine disease; and in the history of many cases there was nothing to make us suspect its existence, nor to warrant a vaginal examination.

Admitting that ours were neither cases of inflammation of the bowels, of dysmenorrhœa, nor of uterine disease, we remark that they can only be explained by supposing them to depend on a nervous affection of the ovary itself, or of the lumbo-abdominal nerves, which supply *alike* the womb and the ovaries and their protecting cavity,

unless we are right in considering that they exemplify a subdued type of ovarian inflammation. It would be impossible for us to show that they did not depend on ovarialgia or lumbo-abdominal neuralgia, unless we were permitted to clear the ground by a few remarks on these affections.

Ovarialgia has been admitted by systematic writers, vaguely described by German pathologists, and lately brought prominently forth under the name of ovarian irritation, by Dr. Fleetwood Churchill. But while admitting that the ovaries, like the uterus, may express their sufferings by pain transmitted to their nerves, we must also bear in mind that those nerves may take upon themselves a morbid action, quite independent of diseased ovaries or womb—that lumbo-abdominal neuralgia may exist.

Certain forms of *lumbo-abdominal neuralgia* were well described by Chaussier; but it is only since the modern investigations of the nervous system, that it has been permitted satisfactorily to explain, by lumbo-abdominal neuralgia, several morbid states formerly ascribed to the abdominal viscera. Without pretending to say that ovarialgia does not exist, we are inclined to think that cases described as such are in general to be referred to lumbo-abdominal neuralgia. We make this assertion with some hesitation, because by so doing we find our opinion opposed to that of an obstetric authority of so great a value, that by differing from it we incur the risk of being wrong; but, if wrong, our dissent will furnish Dr. F. Churchill the opportunity of more forcibly vindicating his own opinions.

On perusing Dr. F. Churchill's interesting communication on "Ovarian Irritation," in the impression of the *Dublin Medical Review* for July, 1851, and comparing it with what Drs. Beau, Valleix, and some other French authors, have written on lumbo-abdominal neuralgia, it will, we think, be evident that they have all described the same disease. Neither would it be difficult to explain the mistake; for it is well known that it is in the nature of the affections of nerves to be attended by pain more concentrated in certain points, whence at times pain radiates, and pressure on which increases pain. The lumbo-abdominal neuralgia is often indicated by one or more of the following *foci* of pain: 1, the lumbar; 2, the iliac; 3, the hypogastric; 4, the inguinal; 5, the uterine.

We think that Dr. F. Churchill, being particularly struck by the inguinal or ovarian point of pain, has described, under the name of ovarian irritation, a complaint which has been justly referred to a morbid sensibility of the lumbo-abdominal nerves by Drs. Valleix, Axenfield, Beau, and others, he has followed in this the example of Gooch, who described as irritable uterus those cases of lumbo-abdominal neuralgia in which the neck of the womb is the principal centre of pain; an example already set by neuro-pathologists, who have described as spinal irritation an ill-defined group of symptoms.

We refer the reader to Dr. F. Churchill's paper, and to the French authorities we have quoted, in proof of the great similarity, if not identity, of the morbid state described as ovarian irritation or lumbo-abdominal neuralgia. But, under all circumstances, we object to the

term *ovarian irritation*, because it has already been employed to express the physiological action of the ovaries, and imports another vague and indeterminate term into ovarian pathology, already sufficiently obscure. If it be only pain, let it be called ovarialgia, or lumbo-abdominal neuralgia.

Supposing it be conceded, until further researches, that ovarialgia is but another name for lumbo-abdominal neuralgia, then it only remains for us to establish the diagnosis between it and sub-acute ovaritis, which is often rendered difficult by the identity of the seat of pain in both complaints. Pain exists in all, but while in sub-acute ovaritis it is more fixed, continues with the same intensity without regular exacerbation, and is exasperated by every kind of pressure, in lumbo-abdominal neuralgia it is quite the contrary; for although there may be at all times a dull, aching sensation, it is frequently not so, and the pain recurs by repeated attacks, and is relieved by wide or even by continued pressure with the united tips of the fingers. Dr. F. Churchill rightly says, that what he terms ovarian irritation is characterised by a kind of nervous tenderness, which shrinks from the weight of the finger as much as from severe pressure, and not by the *positive* pain, as in our cases.

There is no swelling, no heat, no pain of the ovaries, when these organs are subjected to a rectal examination, as correctly stated by Dr. F. Churchill, whereas there is heat, swelling, and pain, in sub-acute ovaritis.

The pain is unaccompanied by any sympathetic pain of the breasts, or fever, in lumbo-abdominal neuralgia; not so in sub-acute ovaritis. Lumbo-abdominal neuralgia is so frequent an accompaniment of uterine disease, that Dr. Beau and others expect to find it when the former exists, and Dr. Bennet looks upon its ovarian focus as almost pathognomonic of uterine disease, while sub-acute ovaritis is not so frequently induced by uterine disease. Lastly, with regard to the treatment. Repeated blisters and opium are of most use in lumbo-abdominal neuralgia, but such remedies, valuable in the later stages of the disease, require to be employed after leeches, emollients, &c., in sub-acute ovaritis. If our argumentation be not at fault, then sub-acute ovaritis can be diagnosed with a degree of precision quite sufficient for all practical purposes, without having recourse to any internal examination.

Taught by former experience, wherein the coincidence of sterility or uterine disease rendered imperative a more accurate examination, we concluded from the symptoms narrated that the ovaries were sub-acutely inflamed, although we did not feel them swollen, although we did not see the patient wince under the moderate pressure of the finger mediately applied to these organs; but we repeat, that whenever the case is complicated, or when great precision is required, it is necessary to make a rectal examination, and Dr. Bennet has misapprehended us when, in treating of inflammatory dysmenorrhœa, he states that we consider pain and tenderness in the ovarian regions as sufficient indications of sub-acute ovaritis.

PROGNOSIS OF SUB-ACUTE OVARITIS.

Since sub-acute inflammation can be diagnosticated, we cannot agree with Dr. F. Churchill, who says—Art., *Diseases of Women, Ovaritis*—"Owing to the obscurity of the symptoms, and the anatomical relations of the ovaries, chronic sub-acute ovaritis is so serious, that the prognosis is always grave." This was Astruc's opinion; but even then, when physical diagnosis was so imperfect, this shrewd physician added: "If the diseases of the ovaria could be detected early, there are some which might perhaps be cured." Have we been successful in proving the possibility of their being so ?

CHAPTER XIX.

TREATMENT OF SUB-ACUTE OVARITIS.

Principiis obsta, sero medicina paratur.

It is particularly necessary to bear in mind the peculiar functions of an organ when we wish to cure the diseases to which it is liable. As the ovaries are subject to a periodical excitement, and are the starting-points of the nervous currents, which thence take their centrifugal course, determining in their passage the menstrual discharge, by which the regularity and intensity of these currents are manifested, we must admit, as a fundamental point of practice, the necessity of not interfering with the normal direction of such currents by active treatment during the menstrual epochs. The radical treatment of sub-acute ovaritis should, then, be attempted during the intervals between successive epochs. We shall exemplify the treatment which we have found successful by a case in point, and afterwards offer our remarks on the various remedial measures we have been led to employ.

Case 48.—*Sub-acute ovaritis producing sterility; cure followed by pregnancy.* When practising in Paris, in 1844, we were consulted by a gentleman, about thirty years of age, presenting every appearance of good health, who told us that his wife was in her twenty-fourth year, that at the age of fifteen she menstruated for the first time, but that this function had always been accompanied by pain, and was frequently irregular in the time of its appearance. He had been married five years, and since then the menstrual discharge had been more regular, but accompanied by a great increase of pain. She was seldom subject to leucorrhœa, but sexual indulgence was sometimes painful. For the last year various means of medical relief had been tried, but with so little success, that her husband said he was not induced to consult us for his wife in the hope of our being able to relieve her monthly suffering, but to inquire if there were any remedy for sterility. The lady presented all the appearance of a lymphatic constitution; she looked delicate, but was apparently in tolerable health; she did not expect to be unwell for the next fortnight, and she was not then in pain; but on rapidly depressing the ovarian regions with the united tips of the fingers, we produced a pain similar to that she experienced when menstruating. On examining by vagina, we received an indistinct perception of a small tumour, which

we took for the right ovary; and on making a rectal examination, we distinctly felt both ovaries, each being swollen to about two inches in the long diameter. They were painful on pressure. Having ascertained the tumefied state of the ovaria, and their tenderness on pressure, and bearing in mind the previous history of the patient, we considered them sub-acutely inflamed. We determined, however, to do nothing previously to the next monthly period, so that we might judge of the nature of her sufferings, and afterwards have full three weeks to alleviate them. A few days after, she was suffering from all the symptoms of dysmenorrhœa; the pain, on pressing the ovarian regions, was greater; and, on examining through the rectum, the ovaria were found still larger and more painful. When the period was over, we began the treatment, by applying eight leeches over each ovarian region; the leech-bites being healed, we applied over the same region a blister, five inches in length; the cuticle was not removed, and three days after, when the skin was healed, we ordered the same region to be carefully rubbed for ten minutes, morning and night, with a portion, about the size of a walnut, of the following ointment: ung. hydrarg ℥j, ext. belladonnæ ʒj, ext. hyoscyami ʒj, camph.—solut. in spirit.—gr. x; the abdomen to be afterwards covered with flannel, without removing the ointment. We also prescribed enemata of aquæ camph. ℥xv, aquæ lauri cerasi ʒvi; sometimes adding tinct. hyoscyami, ʒiii. A third of this quantity was injected into the rectum three times a day, the chill having been first taken off, so that it might be, as much as possible, if not entirely, retained. Due attention was paid to the regularity of the bowels, mercury being avoided, and saline purgatives preferred. For the first few days, until the blistered surfaces were healed, the patient left her bed only to recline on the sofa; afterwards she was allowed to take exercise as usual, and her strength was kept up by generous diet. Abstinence from the nuptial bed was strictly enjoined. On examining by the rectum a few days before the expected time, we found the ovaria diminished in size, but still painful to the touch. The next menstrual period was accompanied by the usual dysmenorrhœal symptoms; but the patient said that she suffered less than she had ever done since her marriage. When menstruation had ceased, we subjected her to exactly the same treatment, and her sufferings were again diminished during the ensuing menstruation. She submitted to the same course a third time; and, on exploration, we found that the ovaries had resumed their usual size, and that pressure was not accompanied by pain. The third menstruation since the beginning of the treatment was attended by little pain. We discontinued the leeches, blister, and ointment, but advised the regular continuation of the enemata. We permitted cohabitation, at the same time recommending moderation to her husband. Four months after this, our patient was pregnant, and in due time was delivered of a boy.

Remarks.—The phenomena presented in this instance are not uncommon, as many of the cases called dysmenorrhœa are attended by them all. The treatment was, at any rate, rational;—local depletion, to diminish the ovarian congestion; blisters, to break the chain of

morbid nervous influences—fostered by the long habit of suffering—in the organs of ovulation; mercurial ointment, narcotic extracts, and camphor, to reduce the pain and vascular excitement. The enemata were administered with the same intention. In another case, the symptoms of dysmenorrhœa were evidently caused by marriage. The patient was a young and delicate female, in whom was found the same ovarian swelling, and where similar treatment was employed; but we did not meet with an equal response in the way of attention to our advice. Her pains were, however, diminished, but relapses occurred. She was under treatment for six months; and though she had been sterile for seven years, she shortly afterwards became pregnant. When residing at Rome, we attended a similar case, and we have since heard that the carrying out of our advice was followed by pregnancy, after six years of unfruitful marriage.

BLOODLETTING.

Bleeding may be spoliative or revulsive. In plethoric patients, a spoliative bleeding may be advantageous; it may alleviate strong pelvic pains, and cause the menstrual function to be performed without dysmenorrhœa. The best time for bleeding, in such cases, is during the few days preceding the catamenia. Good results have followed this mode of bleeding, whether the blood be taken from the arm or the leg; but it is most prudent to take it from the saphena.

Revulsive bleeding.—Since publishing our last edition we have returned to the plan of treatment laid down by those eminent men who, in Paris, first began that improvement in our knowledge of uterine disease, the fruits of which we now reap. We have returned, and with excellent results, to the practice of small revulsive bleeding. Thus, in treating sub-acute ovaritis, we have, during the intermenstrual period, taken once or twice three or four ounces of blood from the patient's arm. It will be evident to practitioners that the removal of this small quantity of blood cannot, in general, excite that nervous reaction determined by large bleedings, in women below the average strength; and this plan will be found less to weaken the patient than the endurance of pain.

When the process of menstruation has produced an exacerbation of symptoms, then a small bleeding should be made immediately the flow has ceased. It seems as if, by this mode of treatment, we diminished the tendency to congestion and the impetus of the sanguine current. The practice is equally useful in the treatment of uterine disease.

We have also, in general, derived advantage from local bloodletting. We order leeches because they are as efficacious, if not more so, than cupping, and can be applied by the female attendant of the patient. With regard to the number of leeches to be prescribed, we must bear in mind, that by applying a small number—from four to six—we should only increase the state of congestion of the pelvic organs—a plan of treatment, in fact, daily adopted with the view of determining menstruation. On the contrary, we should order a sufficient number of leeches to make a decided effect on the local inflammation—from

eight to twelve. They should be applied to the ovarian region, as much as possible over the seat of pain; and warm poultices or fomentations should afterwards be placed on the bleeding leech-bites. We seldom order leeches to the womb, nor scarify it, for even if by this means slight relief were afforded by the immediate depletion of the uterine vessels, such an advantage would be purchased at the risk of uselessly offending the patient's feelings by the untimely interference of a surgeon, by whom the application of leeches must generally be made. The mechanical irritation resulting from the prolonged application of the speculum, and the difficulty of withdrawing a considerable quantity of blood, must be considered also as drawbacks on this mode of application; while at other times the bleeding is so abundant that it is necessary to plug the vagina. Neither is their application at all times without pain; for when the leeches have fallen off, the pain is sometimes excruciating, and tends to keep up a congestion which was sought to be relieved.

We are confirmed in our opinion of the inutility of treating ovaritis by leeching the womb, by the uncertainty of their utility in many uterine inflammations. Lisfranc doubts, even when fifteen or twenty leeches were applied to the womb, whether its congestion was not rather increased than diminished; and Dr. Bennet, comparing the results of his practice amongst the rich, who applied leeches, and the poor, who did not, comes to the conclusion that they have very little effect on the duration of the uterine affection. In inflammatory affections of the ovario-uterine organs, we therefore think leeches in general unadvisable; and if there is any tendency to malignant disease, every leech-bite may be converted into a cancerous ulceration. For similar reasons, we likewise object to the application of leeches to that portion of the rectum which covers the ovaries; although this plan has been recommended.

At Paris, we have seen a continued flow of blood kept up for eight or ten hours from a small number of leech-bites. From one to three leeches have been applied to the upper and inner part of the thigh, and when blood has ceased to flow from the bites, other leeches were applied.

PURGATIVES.

These are advantageously given, both to counteract a tendency to inflammation, and to remove from the vicinity of the ovaria all causes of mechanical irritation, such as scybala, and morbid intestinal secretions. The most cooling purgatives, the saline and oleaginous, should therefore be given, while drastics and aloes, which act as the peculiar irritants of the lower part of the intestines, should be avoided, except when they are indicated to help the menstrual flow.

INJECTIONS.

These are most valuable addenda to the preceding remedial measures, though seldom followed by a full amount of benefit, on account of their not being administered with due attention. Their composition should be similar to that prescribed in the case given in p. 199.

Sometimes, however, we have substituted the tincture of belladonna or of opium for that of hyoscyamus; and in England we have seldom employed the lauro-cerasus water—though we think it a valuable remedy—on account of the difficulty of obtaining it, and of the variation in the degrees of its strength. With respect to the administration of injections, the bowels having been previously opened, or else an injection of water having been made, four or five ounces of the tepid enema should be injected slowly into the rectum. The patient should be told to take the injection while lying on her back, with a pillow under the nates, so that the pelvis may be somewhat higher than the rest of the body. This injection should be repeated three or four times a day; and when we consider that the liquid injected is separated from the inflamed ovaries only by a thin elastic and highly-absorbent membrane, it will not be difficult to understand that enemata, thus carefully given, are productive of the greatest advantage. When the patient is cured, the medicated enemata should be discontinued, and replaced by cold water, to be likewise injected into the rectum morning and night. We do not know of any means better calculated to reduce the exaggerated ovarian irritation than the habitual use of cooling enemata; and we may remind the reader of the powerful effect of cold-water enemata in arresting a tendency to hysterical seizures, and suddenly removing them when they already exist. By cold water, we mean that which has stood in an inhabited room, and which, when introduced, gives an impression of being very nearly cold, without chilling the patient; and in making injections, whether for the cure or the prevention of disease, the patient should be carefully told—

1. Not to insert a metallic point into the rectum, but a rounded extremity, after having previously greased it with cold cream.
2. To insert it gently to about two inches in depth.
3. Not to inject the liquid with force, or it might mechanically increase the complaint.
4. To retain the fluid as long as possible.

A great increase of pelvic weight, pain, and heat, would indicate that the injection had been either too cold, too hot, or given with too great force.

Vaginal injections.—Cullerier, sen., and Lisfranc ascribe no great utility to narcotic vaginal injections; they are, however, useful in the hysterical type, as stated by Brierre de Boismont; and we have of late seen them followed by good results. The precautions for the giving of rectal injections apply also to the vaginal.

BLISTERS.

So soon as the leech-bites are healed, blisters, of four or five inches in length by three in breadth, should be applied over the ovarian regions. The blisters must be carefully camphorated, so as to guard against the distressing symptoms of dysuria. The epidermis must not be removed from the skin, and the irritated surface should be healed as soon as possible. Whether the effects of blisters are to be ascribed to counter-stimulation, to the loss of serum, or to the direct

sedative influence of cantharides on the nerves and organs to which it is applied, according to the views of the Italian school, is difficult to say; but, in this instance, they probably act by breaking the chain of morbid action to which the ovaries have become accustomed. They may attack the nervous element of ovarian inflammation, as in those cases wherein intense vomiting is suspended or cured by blisters applied to the pit of the stomach. The antimonial ointment operates in a similar manner, and might be prescribed, in case the mercurial frictions did not produce the desired effect. Dr. Rigby says: "I know of no application so efficacious as the antimonial ointment, well rubbed into the part, and when the eruption comes out, applied by a piece of lint, until a slight degree of sloughing is produced. The only objection is, that the patient is occasionally attacked with nausea, faintness, and other symptoms, from the system having been brought under the influence of antimony." We consider this rather as an advantage of the treatment than as an objection to its use.

We read with surprise—Meissner, *Treatise of Diseases of Women and Children*—that Sadler applied a moxa over an ovarian inflamed tumour, and repeated it five days afterwards, which considerably diminished the size of the tumour, and was so far useful as to enable it to withstand the impetus of menstruation.

MEDICATED INUNCTIONS.

So soon as the surface of the skin is perfectly healed, we must have recourse to other means of relief. Before mentioning the applications we generally prescribe, we must remind the reader, that frictions on the ovarian regions have often been advantageously employed by Boivin and Duparcque in France, and by Granville, and doubtless by others, in England. Madame Boivin says, that in several cases of inflammatory adhesions of the broad ligaments, accompanied by dysmenorrhœa, pains, constipation, and tendency to abortion, she relieved the patients by persisting in mercurial frictions over the ovarian regions; and she adds, that this treatment not only stopped the pains, but re-established the proper catamenial discharge, cured the ovarian irritation, and imparted to the uterus the power of retaining its fruit until it was in a condition to be brought forth alive. Dr. Granville has also cured the tendency to that species of miscarriage produced by ovarian irritation, by combining the internal use of castor oil with mercurial frictions. We have derived increased benefit from mercurial frictions, by mixing narcotic extracts, such as extracts of hyoscyamus, belladonna, and opium, together with mercurial ointment, in the proportion of a drachm of the extracts to an ounce of the ointment. This is the most effectual means of allaying the pain, which is in itself a perpetual cause of irritation; and as camphor is acknowledged to have a cooling effect on the system, we combine it with the mercurial ointment, both on that account, and because of its anti-aphrodisiac properties. We may here remark, that Lisfranc had already noted the good effects of camphor in uterine disease, three or four grains being given in an enema. Jahn employed an ointment composed of ung. hydrarg. two ounces, potass.

iodid. three drachms, in a case which had lasted seven years, and was accompanied by amenorrhœa; there were two swellings; one disappeared, the other was much reduced. Pr. Pistocchi lauds the outward application of ext. conii., two drachms to the ounce of lard, with the addition of a small quantity of mercurial ointment.

We can safely recommend to the profession the use of this compound mercurial ointment; for at the public institutions with which we are connected, it is our practice to prescribe it whenever a patient complains of deep-seated ovarian pains—pains in the ovarian region, extending to the loins and thighs—depending on deranged menstruation, or previous severe labours. In the milder cases, the pains subside after the ointment has been used for a few days; and in many others, when the pains had followed severe labour, had been considerable, and had lasted for two or three years, we have seen them disappear after a continuance in the use of the ointment for six weeks or two months. In some cases, the use of the ointment has been followed by the cure of a leucorrhœal discharge, from which the patient had been also an habitual sufferer. These facts have in themselves a practical value, whatever may be the explanation given of them. In discussing the treatment of acute ovaritis, we shall see that when a more powerful action of this remedy is required, we can employ it according to another plan.

When the case is one of long duration, relapsing at menstrual periods, and particularly if it be possible to detect ovarian enlargement, we have faith in iodine preparations, one to five grains of the iodide of potassium being given twice a day in that bitter infusion which agrees best with the patient, and then three or four drachms of the iodide of lead ointment should be rubbed in, or smeared over the painful part of the abdomen, over this a large piece of oil-silk should be spread, and then the wadding poultice, or the fluffy side of a piece of wadding, sufficiently large to cover the whole abdomen, all this being kept in place by a thin but well-contrived abdominal bandage.

MEDICATED PESSARIES.

We have sometimes employed, with benefit, the medicated pessaries. The medicated ball, being, at night and in the morning placed in contact with the os uteri, and allowed to melt in the vagina, its active components are thus enabled to exert a permanent action on the generative organs. The following formulæ can be recommended:—Extract of belladonna, two drachms; camphor, ten grains; yellow wax, a drachm and a half; lard, six drachms, to be made up into four balls.—Strong mercurial ointment, two drachms; extract of belladonna, one drachm; yellow wax, two drachms; lard, an ounce, to be made up into six balls.—According to the circumstances of the case, they may also owe medicinal virtues to iodide of potassium, a drachm, or to acetate of lead, two drachms, for four pessaries.

BATHS.

Physiologists who have studied the action of baths, or the medical

men of other countries where they form an important part of therapeutics, because they are considered an important part of hygiene, tell us that the sedative action of baths can be rarely attained even by stopping an hour in the water, and they recommend the patient to remain in it from three to four hours. This will doubtless seem strange to English ears; but we have too often seen women, suffering from ovarian or uterine inflammation, derive benefit from this mode of practice, to have any hesitation in recommending it. The temperature of the bath should be such as not to chill the patient, and the constant renewal of the warm water should so maintain it at the same degree of heat, that the patient may remain in the bath for at least an hour.

Not so local baths, such as foot-baths or hip-baths, whether medicated or of warm or cold water, for we are convinced that by their too frequent domestic use much mischief is done. Warm hip-baths and foot-baths are only useful when we seek to bring on menstruation. Given to remedy pelvic pains and disease of the ovario-uterine organs, they keep up a state of congestion which it should be our aim to abate; and if dangerous when the patient is young, they are still more so when employed at the cessation of menstruation.

POSITION.

The horizontal position is an important element in the treatment of diseases in the generative system, although less necessary in the treatment of ovarian than uterine inflammation; the utility of the recumbent posture should be explained to the patient by adverting to the diminished size of the veins of the hand when held up, compared to their more enlarged size on holding them down.

ALTERATIVES.

We mean by alteratives, medicines by which we cure disease, without producing any sensible evacuation. Dr. Oldham has extensively given small doses of mercury in combination with tonics, and says, that he has derived more benefit from this than any other means, particularly in the menorrhagic type, in which he finds the remedy supersede the use of leeches. We have also found it useful. Pr. Pistocchi gives unqualified praise to ext. of conium internally and outwardly applied, and the success attributed to this agent by Baron Stoërk in uterine diseases, warrants its exhibition, particularly as the Baron's assertions are supported by those of Dr. Tunstall, of Bath.

We have already praised the external exhibition of iodine preparations.

Such are the remedial measures suitable to all types of sub-acute ovaritis, but the patient should be warned that nature, by subjecting her to a periodical return of pain and congestion of the ovaries, renders her liable to returns of a low inflammatory action in the same organs, and that therefore it may be necessary to continue the treatment month after month, to use sedative rectal injections a few days before the return of menstruation, and during the flow, if there be

much pain, though at that time warm water should be injected instead of cold.

PREVENTIVE TREATMENT.

This is no less the practitioner's duty to enforce, even though he may not be questioned on this score by patients or relatives, ever anxious to throw off the trammels of medicine when they are once relieved from pain. This essential part of practice should be planned in order to fortify the nervous system by diet, exercise, amusements, and tonic medicines; to ensure the avoidance of such causes as we have shown are the most likely to give rise to menstrual disorders in general, and in particular to sub-acute ovaritis—such as cold, emotional stimuli, and in the married, sexual indulgence. The reader will easily deduce the means of successfully preventing the development of ovarian and uterine disease from a careful study of our long chapter on the causes of sub-acute ovaritis, or, if he wishes to see the subject treated at a length proportionate to its importance, we refer him to our lately published work—*Elements of Health, and Principles of Female Hygiene*—the only work, we regret to say, on that subject.

TREATMENT OF PUERPERAL SUB-ACUTE OVARITIS.

With regard to the treatment of the puerperal variety of sub-acute ovaritis, we cannot do better than give a case published by Dr. Doherty, who was one of the first to draw the attention of the profession to this form of disease. The treatment already prescribed should be enforced with greater care, on account of the liability of the patient to more serious local disorder. Some have recommended that the mother should wean her child; but even if the supply of milk be diminished, it is more prudent to keep the mammary glands in a state of secretion, than, by arresting their action, to add another cause of deranged function, and of morbid excitement.

Case 49.—Margaret G., aged twenty-six, the mother of one child, which had been born in the Dublin Lying-in-Hospital a month previously, was readmitted on the 12th December, 1838—during Dr. Kennedy's mastership—into the ward in that institution appropriated to diseases of females. Her labour had been natural, and she had been discharged well on the ninth day. Four or five days after she had left the hospital, sickness of stomach and diarrhœa set in, and slight pains occurred in the lower part of the abdomen. Within the last six days before readmission she had occasional rigors, and the pain in the abdomen, particularly towards the right side, had considerably increased. She felt, too, great stiffness and pains when she attempted to walk, or even straightened her leg; pulse was 100, and soft. She slept generally till four o'clock in the morning, when she awoke bathed in perspiration; she had no difficulty in making water; her bowels had not been freed for the last two days. On examination, great hardness and general tumefaction were detected in the right iliac region; the roof of the vagina, as ascertained by the touch, was exceedingly resistant, and the uterus firmly bound down, so that the fundus

was turned towards the right side, while the os was directed towards the left sacro-iliac synchondrosis. The plan of treatment adopted consisted in leeching, blistering, and the exhibition of Plummer's pill, and under it the iliac region became softer, and the vaginal roof seemed inclined to relax. Iodide of potassium was then given, and iodine ointment applied internally to the roof of the vagina, while counter-irritation was maintained without. Her recovery was interrupted by her leaving the house for a few days, and shortly after her return—that is to say, on the 10th February—she had shivering during the night; next day her pulse was quick, there was considerable tenderness and tumefaction in the right iliac region, and the inability to stretch the leg was increased. During the night of the 12th, the pain in the right iliac fossa became exceedingly severe, so as to make her seize hold of the bed-post, and on the subsequent morning the tumour was found to have greatly increased both in size and tenderness; it formed a swelling equal in dimensions to a fœtal head; it was regular on its surface, tense, but elastic. By means of an examination per rectum, it was ascertained to consist of the inflamed ovary. One dozen and a half of leeches were immediately applied, and she was immersed in a warm bath; pills of Plummer's pill, James's powder, and opium, were given. On the morning of the 16th the tumefaction had considerably abated, and the report on the 18th was, "tumour can barely be detected. No solid lumps came away, nor was there any reason to believe it to have depended on a fæcal collection; the pulse is quite quiet." From this period absorption appeared to proceed much more rapidly than before, and on the 10th of March she was dismissed, with the pelvic tissues restored to their natural condition.

TREATMENT OF THE AMENORRHŒAL TYPE.

Even when accompanied by its frequent attendant, chlorosis, leeches may be necessary; the loss of a small quantity of blood is amply compensated by giving back to the system the full benefit of the stimulus it should derive from the healthy action of the sexual organs, and this will be effectually assisted by the administration of tonics and steel preparations. On the subsidence of the symptoms of sub-acute ovaritis, Bullock's syrup of citrate of quinine and iron is the tonic we generally prescribe, advising fifteen to thirty drops to be taken twice a day, in a little cold water, or in a little bitter ale. The medical attendant's sagacity will be tested in his treatment of cases of this type, which he must be careful not to confound with those of another kind of chlorosis, which we have shown to depend on the arrest of ovarian evolution; for in such cases, antiphlogistics would do harm, while benefit would follow the use of local stimuli, such as warm plasters, blisters, or of electricity, as has been proved by Dr. Golding Bird, and even the careful exhibition of emmenagogues.

TREATMENT OF THE DYSMENORRHŒAL TYPE.

Cases of this description are most obstinate, and require to be attacked for months after each menstrual period, by the rotation of the remedies to which we have drawn attention.

It is here that the small revulsive bleedings from the arm, the long-protracted tepid baths, the tepid injections with tincture of opium, extract of belladonna, or asafœtida, and one to two grains of camphor, rubbed in with the yolk of an egg, will be particularly serviceable. With regard to the doses of these narcotics, the practitioner, after beginning with the usual doses, will give whatever amount is wanted to relieve the atrocity of pain, otherwise he should not give them at all.

But under the annoyance of a prolonged treatment, we may still buoy up the patient's hopes, by impressing on her that the ovarian disorder is such as permits us to believe that, in spite of her protracted sufferings, the integrity of the ovarian functions may not be seriously compromised. We once met with a case similar to that mentioned by Dr. Copland, when describing the most severe and obstinate instance of dysmenorrhœa for which he had ever been consulted, and still the patient had a family after marriage.

TREATMENT OF THE MENORRHAGIC TYPE.

In spite of the patient's weakness, we may be obliged in some rare cases to apply leeches, and thus break in upon the *ruptus humorum* which is draining the patient; by so doing, we shall moderate, but not arrest, menstruation. This reminds us of a singular fact which occurred in the practice of Dr. Kapeler. A patient was under his treatment for acute pneumonia; she was bled seven times, and menstruation immediately afterwards appeared.

TREATMENT OF THE HYSTERICAL TYPE.

We cannot understand how Dr. Watson could have affirmed—*London Medical Gazette*, 1841—that in 99 cases out of 100, hysteria is unattended by peril, either to body or mind.

Those who particularly study mental complaints on the diseases of women, are alike convinced that hysteria is frequently caused by some organic or functional disorder of the ovario-uterine organs. When dependent on sub-acute ovaritis, it is particularly necessary to bear in mind our reflections on preventive treatment in general; the urgency of watching over the healthy action of the sexual organs, and strengthening the nervous system by mental and moral as well as by physical diatetics, but in this respect our prescriptions are of little avail, for the patient is too often left at the mercy of capricious and misguided relatives.

It would be worthy the ambition for every mother to seek to develop the "mens sana in corpore sano"—the *mens sana*, by the active exercise of those powers of mind which can alone keep in due subjection the flights of a vivid fancy, or the yearnings after an unknown happiness which will still obtrude its phantasms on the youthful imagination; and the *corpus sanum*, by giving increased action to the muscular system, through the different modes of exercise, thereby correcting the exaggerated preponderance of the nervous system, keeping in healthful play the different organs of the frame.

Is marriage to be sanctioned when women are suffering from this type of sub-acute ovaritis?

We say decidedly not. The disease, in the generality of cases, may be removed by proper treatment, and if it cannot be so removed, then it is dangerous to subject a morbidly irritable nervous system to the new stimulus of matrimony, which in such cases causes generally an increase of the nervous affection, and of the sexual disorders.

It has been suggested that, as epilepsy frequently depends on ovarian irritation, and completely disappears during pregnancy, the physician should sanction the marriage of epileptic women; but in some, epileptic fits only occur during pregnancy, as in a case cited by Tissot, of a woman of Ferrara, in whom epileptic fits were a sure sign of pregnancy, for at this time she had two fits every month, and none at any other. But even if a sufficient number of cases were brought forward to show a probability of benefit to the mother, her offspring might be tainted, or the disease might show itself in her grand-children, of which Mr. Streeter has given an instance. In this age of enlightenment people must be allowed, no doubt, to do what they please with their own bodies, but it behoves the physician to consider the race as well as the individual, and not to give his sanction to anything that may taint the purity of either.

Is marriage to be countenanced when the ovaries are prone to be sub-acutely inflamed?

When sub-acute ovaritis is cured, and there merely remains a tendency to relapse, we think it right to permit marriage, for although the apophlegm has some great mischief, there is some truth in Pliny's assertion, that "Multa morborum genera primo coitu solvuntur." If, however, the ovaries should relapse into sub-acute inflammation, under the influence of the matrimonial stimulus, the disease must again be carefully checked by appropriate treatment. We believe that nature, true to all her healthful impulses, promises the continuance of a greater amount of health to those who take upon themselves the burden of child-bearing, and the perils of delivery, and that marriage is, in many cases, a preservative against hysteria and those spurious ovarian and uterine growths, before which the medical attendant would afterwards stand in powerless dismay.

TREATMENT OF STERILITY.

Having nothing additional to state respecting the treatment of such cases of sub-acute ovaritis as are followed by sterility, we shall proceed to consider the inflammation of the Fallopian tubes as a cause of this infirmity. After mentioning, in a paper read before the Westminster Medical Society, that sometimes these tubes are obstructed by mucus, we asked the question—"Does this condition give any therapeutical indication? Dr. Mackintosh has shown that we may, in some instances, relieve patients suffering from a similar obstruction of the neck of the womb, by probing and dilating its canal. Will men of eminence likewise attempt to probe, dilate, and inject the Fallopian tubes? We hope not, for peritonitis is not a disease

to be trifled with. When we consider that we can only *guess* at this possible cause of sterility, and have no positive evidence of its existence; when we remember that in the dissecting-room, it is often difficult to pass a probe from the uterus into the Fallopian tube,—the difficulty of doing so on the living body seems tantamount to an impossibility—an impossibility not to be regretted; for the advantage attending the operation could only be attained at the risk of imminent danger to the patient's life."

At the following meeting of the Society, Dr. Tyler Smith explained that he had performed this operation, and he exhibited an instrument which he had invented for deobstructing the Fallopian tubes in such cases. The instrument, in the use of which the speculum is always required, consists of a small silver catheter, bent like the male catheter, or the uterine sound, to adapt it to the curve formed by the uterus and vagina, and having a lateral curve at the distal extremity, pointing, when *in situ*, to the uterine mouth of the Fallopian canal. Through this catheter, a fine, flexible, whalebone bougie is passed into the Fallopian tube. When the small bougie is thus passed, so as to project at its Fallopian extremity, the instrument represents accurately the singular direction taken by the generative canal, from the mouth of the vagina to the fimbriated extremity of the tube.

This novel operation proposed to bring under treatment an important organ which had hitherto been removed from all interference, but the proposal has been very differently received by the profession. Sir B. Brodie is struck by the difficulty of distinguishing in what cases it is required; he thinks it ought to be confided to gentle and cautious hands, but he does not doubt the practicability of performing the operation; he has, however, omitted to inform us whether he himself has performed it. Dr. Oldham, on the contrary, gives the operation an unqualified reprobation. "Indeed," says he, "the operation appears to me indefensible, and, but for the authority of so good a name, it could hardly be rescued from the charge of extravagance." This condemnation has been re-echoed by all those who, in their reviews of our first edition, have noticed the operation. We still doubt the possibility of its performance on the living body, and we would wish to see the precept confirmed by the operation being performed on the dead subject, and the probe being then found in the oviduct on the opening of the body. Moreover, if the operation be destined to remove thick and tenacious mucus, it attempts to remove what always exists in the healthy Fallopian tubes—a mucus so tenacious, that Pouchet has called it "*mucus infranchissable*"—and depicted—Plate xviii., fig. 3—the serried phalanx of its mucous globules. It would be impossible to remove this mucus with the bougie, neither could it modify a morbid condition of the tubes any more than the introduction of the long forceps cures the irritated state of the follicles of the neck of the womb, to which Dr. Tyler Smith has so ably drawn attention.

If it were attempted to cauterise the oviducts, or to inject them with medicated fluids, the unanimous voice of the profession would protest against a practice already found to be so dangerous whenever applied to the cavity of the womb.

We here conclude our observations on sub-acute ovaritis; and, before considering the acute form, we may be permitted to remark that if there be any truth in the assertions of competent authorities, that we have done good in drawing attention to this disease, then is the practitioner bound to give his utmost attention to the detection of the obscure symptoms of ovarian inflammation, whenever called upon to prescribe for dysmenorrhœa, sterility, or hysteria, so that the evil may be attacked in the bud, its increment forbidden, and the disease not allowed to attain such a degree of magnitude as may compromise the patient's life, either by its presence or by operations deemed advisable for its eradication. "Principiis obsta, sero medicina paratur."

CHAPTER XX.

ACUTE OVARITIS.

SYN.—Oophoritis.—Dugès.—Inflammation of the uterine appendages.—Abscess of the broad ligaments.—Pelvic tumour.

DEF.—*Considerable swelling of the ovaria, and of the surrounding cellular tissue, with formation of pus, which is either eliminated or absorbed.*

The terms pelvic tumour or pelvic abscess, are similar to those of dysmenorrhœa, hysteria, &c., of which we have repeatedly shown the prejudicial effects. A pelvic tumour may be the result of inflammation communicated from the cæcum to the surrounding cellular tissue; it may be constituted by the inflamed ovaria and its surrounding cellular tissue, or, on the contrary, it may be formed by an abscess in the cellular tissue subsequent to child-bearing. It may also be sanguineous.

Although much has been published on most of these varieties of disease, the whole of our information requires to be tested and increased by numerous cases exhibiting each variety unadulterated by complications. Large maternity hospitals afford an excellent opportunity of doing this, both for puerperal ovaritis, and for pelvic cellulitis. Idiopathic acute ovaritis is a rare disease, and every pathologist must build its history on cases derived from many sources. Excluding those incompletely given, or on which doubts could be entertained, excluding all those of chronic ovarian tumours in which suppuration supervened in structures totally different from those of the healthy ovary—cases which have been erroneously classed with ovarian abscesses, we have found but 24 published cases of idiopathic ovarian abscess capable of being made use of for this purpose, and adding to them 2 which occurred in our own practice, we shall qualify the assertions of authors by the analysis of these 26 cases. In 12 out of the 26, a *post-mortem* examination showed that the ovary was transformed into an abscess, the great probability of this having been the case with many of the other 14, rests on the testimony of competent observers, most of whom are living. Following the example of the best authorities, we have not separately considered idiopathic and puerperal ovaritis, because the nature, symptoms, and terminations of both diseases are similar, however much the danger of ovaritis may be increased when it arises in the midst of puerperal fever.

PATHOLOGICAL ANATOMY OF ACUTE OVARITIS.

When describing the anatomical lesions of acute ovaritis, we tread on less disputable ground than when speaking of those of the sub-acute form. These lesions are in themselves more apparent, and similar to those produced by acute inflammation in other organs. If the inflammatory process has been sufficiently intense, or has not been actively treated, the ovaria in the course of a few days swell to a considerable bulk; and if by chance an opportunity is afforded of examining them, the peritoneal covering of the ovaria may be found acutely inflamed, red, vascular, the lymphatics full of pus, and the surface covered with false membranes, or imbedded in lymph, as may be seen in the beautiful delineations of Carswell and Cruveilhier. The subsequent effect of the false membranes has been shown at page 180.

The ovaria themselves are swollen to three or four times their usual size, are pulpy, of a bright red colour, very vascular, and with a collection of pus in some portions of their tissue. These purulent deposits scattered through the ovaries have been described by Negrier, and considered as inflamed Graafian cells, filled with pus of their own secreting. He has given an interesting case, where the rupture of one of these very small purulent cavities, and the diffusion of its contents into the peritoneal cavity, terminated in death. These small cavities may communicate, or the central part of the ovary may be broken, nothing being left but the ovarian shell, filled with pus.

In 12 out of our 26 cases of idiopathic ovaritis, a *post-mortem* examination was made. In 7 out of the 12, the pus was found in the unbroken ovarian shell; in 3, its contents had been emptied into the peritoneum, and had caused general peritonitis; and in 3 out of the 7 cases, both ovaries contained pus.

Haller, Portal, Montault, and Cruveilhier, have related cases wherein the ovarian abscess contained several pints of pus; and in the *North American Journal*, 1826, Mr. Taylor has published a case where an ovarian abscess was said to have contained twenty pints of pus, but we are inclined to consider this, and similar cases, as *suppurated ovarian cysts*, and not as ovarian abscesses. Acute inflammation often supervenes on chronic ovarian tumours; this evidently occurred in Portal's case: the tumour is described—*Anatomie Médicale*, vol. iv.—as still containing steatomatous matter.

These collections of pus, if not artificially opened, have a tendency to empty themselves into the neighbouring organs, for they will be found to communicate, by fistulous passages, with various parts of the intestinal canal, with the bladder, with the vagina, or opening into the peritoneal cavity. T. Bonnet, Shenkius, Merat, and Dr. Seymour, have related cases wherein the ovaries were found in a state of gangrene.

It is said, and Dr. H. Bennet has lately repeated the assertion, that inflammatory action generally extends to the cellular tissue contained within the folds of the lateral ligaments. This is only true for puer-

peral ovaritis, and partly explains the gravity of the disease, but idiopathic inflammation generally remains circumscribed to the ovary; in 7 out of the 12 cases, in which a *post-mortem* examination was made, the pus was in an unbroken ovarian shell, and it is not mentioned that the surrounding cellular tissue was much implicated in the other 5.

The coincidence of abscesses in the ovary and the corresponding oviduct, were noticed by Morgagni, and afterwards by Andral, Dalmas, and Haaze. In a *post-mortem* examination, Cruveilhier found both the ovary and the corresponding Fallopian tube distended with pus, the tube being adherent, and the ovary so softened in the vicinity of the adhesion, that it would soon have allowed its contents to pass through the tube to the uterus.

The pathological lesions of puerperal ovaritis are sometimes similar to those described. Pus may be found in the ovarian veins, though not so frequently as in the uterine. Cruveilhier considers the lymphatics to be more commonly distended with the pus they have absorbed; and in several of his plates he has shown the deep and superficial lymphatics of the ovaries and broad ligaments replete with purulent fluid. These vessels have been sometimes mistaken for veins; but when the pus is removed from the lymphatics, those structures appear perfectly healthy; whereas, when veins are inflamed, their tissues are thickened, are more fragile, and are lined with false membranes.

The change produced by pregnancy in the structure of the ovaries accounts for some other changes frequently found in those of puerperal women; for if the ovaria, when already softened and swollen by that physiological process which had not escaped the notice of Bichat and Roux, are attacked by acute puerperal inflammation, we need not wonder if their whole substance should be dissolved into a jelly-like substance without admixture of pus. Morgagni was one of the first to notice this peculiarity—*Epis.* 46. In a woman who died on the thirtieth day after her confinement, Morgagni found an abscess formed between the right ovary and the colon, which was the cause of death. The left ovary, although, in size and colour, not differing from one in a healthy condition, was softer than usual, and on being opened was found to consist of a sort of jelly. No vesicles were found except one as large as a small grape, which was composed of a thin white tunic. The same appearance has been since observed by Collins, Cruveilhier, and Dr. R. Lee.

The size of the tumour is often more considerable, and the stroma loses all trace of organisation, being changed into a milky sero-purulent magma, into a greyish sanious matter, or into a vascular pulp, which is almost diffluent, and approaches very nearly to the condition of gangrenous decomposition, since it indicates the total disorganisation of the ovarian tissue. In some cases of puerperal metro-peritonitis, Cruveilhier, Boivin, Dugès, and Seymour, have found the diffluent ovaries ruptured, without it being possible to ascribe the rupture to any violent traction; and the shreds of the organ being mingled with pus and

peritoneal effusion, have, no doubt, been described as the result of gangrene by the older authors. In these cases, was not the ovarian rupture the cause of the fatal peritonitis? Another important pathological distinction between puerperal and idiopathic ovaritis is, that in the latter, as we have already mentioned, the adjacent peritoneum is frequently not inflamed, and may for years form an efficacious boundary to inflammatory action; but in the puerperal variety, the ovarian peritoneum soon participates in, and often originates, the disease—a disease which is the natural sequence of the high susceptibility to morbid action brought on by parturition, and of the increased flow, to the pelvic organs, of blood containing a greater proportion of fibrine than usual.

It appears, however, that this softening of the ovary may sometimes occur in the unimpregnated. Brierre de Boismont quotes the case of a woman, aged thirty-five, who, though up to that time regular, was subjected to the effects of cold while menstruating. The flow stopped, and intense abdominal pain ensued, for which she was admitted into the Charité Hospital of Berlin. On opening the body, a considerable quantity of blood was found in the abdomen which could not be traced to any vascular rupture; but the Fallopian tubes were much dilated, both sides of the diaphragm were inflamed, and the right ovary was converted into something like curd.

With respect to the comparative frequency of the varieties of puerperal pelvic abscesses, we can only mention that Marchal de Calvi, having collected at random 16 cases in which the nature of the disease was ascertained by *post-mortem* examination, he found that there had been

	Cases.
Sub-peritoneal abscess in	5
Sub-aponeurotic abscess in	3
Intra-peritoneal abscess in	2
Several intra-peritoneal abscesses in . . .	1
Ovarian abscesses in	2
Mixed abscesses in	3

The frequency of inflammatory lesions of the Fallopian tubes is much greater than is generally believed. It has been overlooked in many pathological problems of which it forms an element. This frequency is confirmed by the testimony of Drs. Ashwell, R. Lee, and Cruveilhier; and Dr. Hooper, in the few pages prefacing his admirable delineations of uterine and ovarian disease, says that "the Fallopian tubes are frequently found to have suffered from inflammation." Their inflammation is almost always a consequence of ovaritis or metritis, and is confounded with these diseases exactly in the same way as Fallopian cysts are confounded with ovarian—a confusion of diseases which, as the same treatment is required in both cases, is indeed of but little consequence. As regards the morbid conditions which have been noticed, the fimbriæ may be found preternaturally florid, highly vascular, filled with blood, attached by recent false membranes to the ovaries or adjacent organs, or bound down to the

same by firm, thick bands of long standing. The Fallopian tube is sometimes much hypertrophied under the influence of inflammation. Meigs once found it much larger than a stout man's thumb, and the finger could freely move in its canal.

The fimbriæ of both Fallopian tubes may be destroyed, but in general those only of one or the other are totally wanting. This is a lesion of very frequent occurrence, generally coinciding with the obliteration of that extremity of the tube by which it communicates with the peritoneal cavity. The oviducts then terminate in a *cul-de-sac*, increase in size, become tortuous, or assume a pyriform shape, their walls being thicker than usual, and fluctuating when pressed. On being opened, they are found to contain a serous, albuminous, puriform, or bloody fluid, and their internal surface is covered with tenacious or flocculent albuminous substance, the removal of which exposes tissues which are inflamed and softened. We may here observe, that however frequently obliterations of the Fallopian tubes have been found, their imperforation, whether congenital or accidental, has been very seldom met with. A web of false membranes has been often discovered lining the interior of the oviducts of prostitutes, and of those women who have recovered from puerperal metro-peritonitis; whereas the same tubes are often found full of mucus, or even pus, in those who have died in the acute stage of that disease.

In some cases, the internal surface of the oviducts is perfectly healthy, and still they are unable to perform their allotted task, owing to the existence of false membranes, by which they may be glued to the neighbouring viscera so as to preclude the possibility of their precise adaptation to the ovaries. Varying in density, from that of the finest diaphanous film to that of strong ligamentous bands, these false membranes are of frequent occurrence; and, in prostitutes, if we may rely on the testimony of Walker, Renaudin, and Dr. Oldham, the ovaries and Fallopian tubes are seldom found without some one or other of the lesions already described.

CHAPTER XXI.

CAUSES AND SYMPTOMS OF ACUTE OVARITIS.

THE causes of the idiopathic and puerperal varieties have been so carefully investigated when treating of sub-acute ovaritis, that we need not again dwell on them, but content ourselves with observing that acute ovaritis is produced by the greater intensity or continuity of action of the causes of the sub-acute form, by the greater liability of the subject to be influenced by such causes, or by the specific causes which will be taken into consideration.

While contending that in some cases, frequently under some peculiar medical constitutions, puerperal pelvic abscesses originate in ovarian inflammation, it would be absurd to attribute them to that cause alone, for the crushing of the pelvic cellular tissue by the child's head, or by instruments, is quite a sufficient cause for suppurative inflammation in the puerperal state. We refer the reader to the chapter on the causes of sub-acute ovaritis, observing, however, that out of our 26 cases of idiopathic ovarian abscess, 20 patients were married or lived connubially, 5 of the 20 were prostitutes, that all the patients belonged to the reproductive periods of life, 11 of the number being under twenty-five, that the menstrual flow had been for some months more painful in 2, more irregular in 11, and absent in 3 out of the 26.

That the disease originated during menstruation in 6 cases, and in 3 of which under the sudden influence of cold. Once it began soon after a kick on the groin, once after a fall down stairs on the subsidence of the menstrual flow. In 4 cases it was the immediate consequence of marriage, and in 3 out of the 26 cases, the ovarian abscess seemed to arise in chronic uterine inflammation. Gonorrhœa was a predisposing cause in 7 cases, in one of which the disease could be traced to cohabitation at a menstrual period ; in 2 to the suppression of the discharge. One woman suddenly suppressed the gonorrhœal flow by astringent injections, the other by taking a full dose of copaiba.

SYMPTOMS OF ACUTE OVARITIS.

LOCAL SYMPTOMS.—Pain is one of the first indications of acute ovaritis. This is increased by all movements of the body, and most of all, by extension of the limb of the side affected, but this is common

to many varieties of pelvic tumours. The pain varies in intensity, being bearable, or acute. Dr. Ashwell mentions a case where it was so overwhelming, that syncope was induced by the patient's rising in bed to relieve the bladder. The nature of the pain varies, being heavy, dragging, pulsating, or accompanied by a feeling, as if a foreign body were boring its way through the vulva. When alarmed by the pain, if we examine the ovarian region, which is its seat, we can often see a tumour distinctly pointing from the side of the pelvis; but we cannot from the absence of this, infer the non-existence of ovarian inflammation, for the enlarged ovary, if free from adherences, often dips down into the recto-vaginal *cul-de-sac*. If we apply the hand, we detect an increase in the natural heat of the body, of which the patient herself is frequently aware. Pressure increases the pain, and the extent of the tumour is more or less distinctly felt. There may be also a sense of uneasiness or numbness in the limb corresponding to the seat of the tumour, but this often occurs in iliac abscess.

By a vaginal exploration, the passage will be found hotter than usual, and not lubricated by mucus. We may here observe, that ovarian abscesses, like other pelvic tumours and incipient ovarian cysts, interfere with the same organs, and produce the same local symptoms. The physical means of examination which apply to pelvic tumours also relate to the detection of ovarian dropsy in its early stage.

When the tumour is small it may subside between the uterus and the rectum, or between the former organ and the bladder, and in some rare cases, it may not only press on these organs, but actually force down the fundus uteri, causing its prolapsus. If the tumour develop itself behind the uterus, it may press it against and above the pubis, thus producing abnormal deviations by its continued pressure. When the tumour has increased, and is no longer entirely in the vicinity of the vagina, having ascended towards the brim of the pelvis, valuable information respecting its position and nature may be afforded by the finger, though it cannot reach the seat of disease. Thus, the tumour may depress the uterus to the right or to the left, or may flatten it against the pubis, causing its complete retroversion, and rendering it impossible for the finger to attain the os uteri. M. Robert, of Paris, has met with several cases of this description. This cannot take place without elongating the vagina and urethra, altering their form, and interfering with their functions, rendering micturition difficult; and there are patients who can only pass water on reclining their body as much backward as possible. Boivin and Laugier have found it necessary to depress the tumour, in order to pass the catheter; in other cases, a male catheter only can penetrate the bladder; it is sometimes impossible to introduce even this instrument. When we can only just feel the inferior segment of the uterus, its usual mobility may be found checked, or it may be so bound down by the thickening and infiltration of the adjacent inflamed tissues, that it is rendered immoveable. A rectal examination confirms the conclusions of the previous inquiry; and as we have practically shown, page 16, the double-touch affords a means of establishing an accurate diagnosis of these often difficult cases. We can thus guard against mistaking the

uterus for an ovarian tumour. When the tumours are small, we can sometimes seize them in their most frequent abode—the recto-vaginal space; and we can detect fluctuation, if their contents are liquid.

In the commencement of acute ovaritis, the dysuria is only sympathetic; but when the tumour has increased in size, should it fall between the bladder and the uterus, it may give rise, as in the incipient stage of ovarian cysts, to the desire of passing water every minute. If the ovarian tumour becomes still larger, and encroaches on the pelvic cavity, the bladder will be deviated, and its fundus is generally pushed forward and above the pubes, then the catheter, as we have already observed, will not pass freely through the elongated urethra. The urine itself should also be carefully examined, for if it contain pus in a small quantity it would be unnoticed by the attendants, or considered to be the *whites*.

In the early stages of idiopathic ovaritis, nausea, sickness, and sometimes constipation, are frequent accompaniments, depending, at first, on the irritation of the visceral peritoneum, and the temporary paralysis of the muscular coat of the intestines. When the tumour has increased, and rests on the rectum, the patient is troubled by a more constant constipation, and by tenesmus. The pressure on the rectum is sometimes so great, that the fæces are moulded into the form of a riband.

Sometimes constipation is so obstinate that the case is considered to be one of ileus. Thus Rokitansky observes: " In two instances with which I am familiar, the pressure of the prolapsed ovarium, loaded with purulent fluid, produced in each case a fatal form of *ileus*. In one of these the tumour filled the rectum; neither bougie nor injection could be conveyed beyond it, and such was its apparent solidity, that I did not for a moment contemplate puncturing. But the deception was fatal to the patient. The second case, very similar in all respects to the first, occurred in the practice of a surgeon in the country, who sent me its history, and the morbid parts for examination." This must be carefully borne in mind by the surgeon; for constipation was obstinate in 8 out of our 26 cases, the case was twice mistaken for ileus, and the patients tortured by drastics.

If the tumour increases still more, it rises above the brim of the pelvis, and then the lower intestine is no longer similarly compressed. It is incumbent on the medical attendant to examine the fæces, as they, like the urine, may contain pus. So imperfect has been our acquaintance with the nature and symptoms of this disease, that many writers have asserted that it is accompanied by nymphomania. Thus, Dr. Copland, speaking of the acute form of idiopathic ovaritis, says, " the mind is more evidently affected in the sanguine, the irritable, and the plethoric; the desires are inordinately excited, so as almost to amount to uteromania;" and Colombat enumerates inflammation of the ovaria among the causes of nymphomania. But as there are no modern cases on record wherein the ovarian abscess was attended by such symptoms—as, on the contrary, these symptoms were absent in all cases of acute ovaritis lately observed, and as the

cases recorded by the older writers are but loosely given, we are inclined to believe that if, after the symptoms of furor uterinus had been observed, pus was found in the ovaries at the *post-mortem* examination, these symptoms did not proceed from ovaritis, but from some concomitant irritation of the external organs of generation, or of whatever part of the brain is in peculiar correspondence with the organs of reproduction, and impels to sexual gratification.

General Symptoms of Acute Ovaritis.—In the first stage of the complaint, they are similar to those which announce the process of suppuration in any deep-seated organs, such as shiverings, followed by fever of a remittent or continued type, particularly when the symptoms of ovaritis merge into the more marked phenomena of acute peritonitis. These were noted in 15 of 26 cases, fever being marked high in 13. In the worst cases, abundant perspirations, violent thirst, diarrhœa, delirium, coma, and insensibility to pain, close the scene. Frequently, however, the patient amends, and the ovarian swelling diminishes; but, on account of the periodical turgescence of the ovaries, relapses occur; or else the inflammatory type lowers, and chronic ovaritis, or what we have called sub-acute ovaritis, is established.

Anomalous Symptoms of Acute Ovaritis.—Dr. Semple has published the following case—*Lond. J. of Med.*, 1850:

Case 50.—A young woman, aged twenty, was attacked, March 8th, 1842, with peritonitis, and was discharged cured from the Islington Infirmary on the 20th of that month. On the 26th of April, or about a month afterwards, another attack of peritonitis carried off the patient in two days. This last illness was characterised by so much pain in the *epigastric region*, relieved by pressure, that many observers might, with Dr. Semple, have considered the case neuralgia, and ileus was suspected on account of obstinate constipation. Large doses of drastics and opiates were given, but without effect. The patient screamed from the intensity of abdominal pain, but to the last preserved her intellect unimpaired. The arachnoid and pia mater were found injected, the arachnoid was thickened and opalescent. There was no peritoneal effusion, some slight adhesions, but the right ovary was as large as a hen's egg, and contained an ounce and a half of pus enclosed in a sac lined with a smooth membrane.

Dr. Semple rightly observes, that the suppuration of the right ovary was probably contemporary with the attack of peritonitis, and was the only important morbid appearance. "He confesses he has some doubts as to the real nature of the case," but adds, "I can come to no other conclusion than that the patient's death was caused by an attack of meningitis, the peculiar symptoms of which were wholly absent through life."

It seems to us that our explanation of the mechanism of hysteria, p. 90, likewise explains the phenomena of this case. The acute ovaritis determined the intense epigastric reaction, and the ganglionic nervous centre brought on the congestion of the arachnoid and pia mater as it does in cases of hysterical apoplexy. Two out

of our 26 cases of acute ovaritis were attended by hysterical symptoms, and they suggest a similar explanation.

Dr. Jenner tells us that in a patient whom he treated at the Fever Hospital for continued fever, an ovarian abscess was the only lesion found on opening the body. It must also be borne in mind, that, as in other organs, so in the ovary, pus may gather without any symptoms to indicate its presence, as in Valleix' case, as in one of Dr. Tanner's, who remarks, "that prior to the bursting of the abscess the patient only suffered from habitual leucorrhœa, hysteria, and from an habitual aching in the lower part of the abdomen." The permanence of such symptoms show the urgency of a careful examination, by which means the abscess may be often detected and opened, so as to prevent the fatal effects of its bursting into the peritoneum. In 2 instances out of the 26, the patients were said to have been comatose for hours, and then to have come to themselves again; in one of our cases, the swelling, pain, and sickness were considered to be the symptoms of pregnancy.

BLENNORRHAGIC OVARITIS.

Morgagni—*Epis.* 44—quotes, as worthy of credit, a case related as vomica of the ovaries, by Panaroli, who found an abscess in both ovaries of a woman who had long suffered from gonorrhœa. Blennorrhagic *ovaritis* is admitted by Ricord, Vidal de Cassis, Nonat, and other Paris surgeons, as a result of blennorrhagia, occurring under circumstances similar to those which produce swollen testicles in the male when affected with gonorrhœa. Our friend Mr. Acton takes the same view, and states, that in his long experience of the Paris venereal hospitals, he has had opportunities of observing these metastatic inflammations from the uterus to the ovaries. Lisfranc even goes so far as to affirm, that in cases of blennorrhagic ovaritis alone is it possible to assert that inflammation of the ovary has been the point of departure of the pelvic tumour. Pr. Pistocchi believes that, in two of his cases, acute ovaritis was caused by gonorrhœa, which seems evident to us in one of his cases, and in several of those detailed by Dr. Bourraud.

To deny the possibility of blennorrhagic ovaritis reminds us of J. Hunter's denial that the testicles could be affected with syphilis. But notwithstanding this analogy, and the stronger proof afforded by the testimony of the authors, quoted above, the disease is evidently one of very uncommon occurrence, for Dr. Simpson states that having carefully sought for it in some hundred cases of gonorrhœa in the Lock Hospital of Edinburgh, he only met with one doubtful case; and a reviewer in the *British and Foreign Review* expresses his surprise that his experience should coincide with that of Dr. Simpson. An additional proof of the rarity of this occurrence is to be deduced from the fact that acute ovaritis is not marked by Martin Hassing as one of the complaints found amongst the 92 prostitutes examined by him at the General Hospital of Copenhagen, supposing he looked for the disease, for we must not forget that Mme. Boivin

owns to have only detected 2 out of 37 cases of puerperal ovarian abscess revealed by *post-mortem* examination.

As this variety of disease is not generally admitted in this country, we subjoin a case, published by Dr. Vidal de Cassis—*Traité de Pathologie Externe*—who mentions having seen several similar at the Hôpital de Lourcine—the Paris Lock Hospital.

Case 51.—A woman had been suffering for some time from intense blennorrhagic inflammation of the vagina, when the uterus became inflamed, and afterwards there appeared undoubted symptoms of ovaritis. There was acute pain in both ovarian regions, though this was not much increased by pressure; but by a careful exploration it was easy to discover a swelling. The thighs were painful, and subject to cramp. There were sickness, headache, and fever. Ten days after the first appearance of ovaritis, when the pain had abated, the speculum was used: a great quantity of fœtid pus was observed to come from the os uteri, and it became obvious that this pus passed from the ovaries, through the Fallopian tubes, into the uterus, which, on the application of the speculum, contracted, to eject its contents.

Case 52.—A girl, aged nineteen, was received into the Hôpital de la Charité, April 1, 1838. She presented all the appearances of typhoid fever, and complained of very acute pains in the lower part of the abdomen, which were considered to indicate intestinal ulceration; but subsequently she owned that she had been leading a very gay life, and that she was then suffering from an acute blennorrhagic affection. The typhoid symptoms grew worse, and the patient died. Those intestinal ulcerations were found, which in Paris almost always accompany fever; the genital organs were more or less inflamed,—so was also the membrane lining the Fallopian tubes, and these contained a certain quantity of purulent matter. Their uterine extremities were not obliterated. The peritoneal surface was perfectly healthy, except in the vesico-uterine *cul-de-sac*, where soft, pulpy, and thin false membranes covered the womb and part of the bladder; similar productions were found in the recto-uterine space, extending all over the broad ligaments, the ovaries, and the extremities of the Fallopian tubes, one of which was completely obliterated, while the other, although surrounded by numerous false membranes, still communicated with the peritoneum.

In this case, reported by Dr. Mercier, the morbid phenomena were admirably confirmed by the *post-mortem* appearances; inflammation was gradually transmitted from the vagina to the peritoneum, obliterating the free extremities of the oviducts, and binding them down to the adjoining organs.

The like phenomena no doubt take place in prostitutes, and produce sterility. They had the same effect in a woman who was treated for a gonorrhœal complaint by Mr. Wetherfield, of Henrietta-street, Covent-garden, and in whom the disease was accompanied by violent pains in both ovarian regions, and a marked swelling in one. The patient recovered; but although she had previously borne children, and was young, she never again became pregnant.

It may be said there was no ovarian abscess in Case 52; then we may take the following, which occurred under Chomel, and was reported by Dagneau, professor *agrégé* of the Paris Faculty of Medicine.

Case 53.—Margarite C., aged thirty-six, small, and of a delicate constitution, entered La Charité, September 29th, 1830. She had contracted gonorrhœa two months previously, and a fortnight before this she had taken three tablespoonfuls of copaiba. The gonorrhœal discharge, which was then abundant, was suddenly suppressed, and severe pain arose in the left hypograstic region. Chomel detected a swelling in place of the left ovary, and twenty leeches were applied over the spot, with poultices, which treatment relieved the patient, but she became much worse. October 26th was a catamenial period, but without the menstrual discharge. The swelling in the left ovarian region increased; there was frequent diarrhœa in November and January, and pus was sometimes detected in the stools. The patient died January 20th, and on opening the body there was no trace of peritonitis; the womb and right ovary were healthy; and in the place of the left was a tumour as large as a small orange. The superior and anterior portion of the rectum were perforated, and the probe passed into the tumour, which was evidently the fibrous shell of the ovary. Inflammation had emptied it of the softened ovarian stroma, and it was lined by thick pus. The colon, cœcum, and rectum were ulcerated.

It is said that ovaritis does not occur in the acute period of the blennorrhagia, but, in the contrary, when it is on the wane. It may occur, alone, or it may co-exist with metritis. When the patient is mending, the pain first diminishes; next, the swelling; and the discharge becomes more considerable. Ricord and Pistocchi have drawn attention to the fact, that the suppression of the gonorrhœal discharge sometimes coincides with the first development of ovaritis, as the inflammation of the testicle does with the suppression of gonorrhœa. Whether the transfer of inflammation from one part to another is a purely vital phenomenon, as it is generally esteemed, or whether, as we think, it is sometimes brought about by mechanical means, remains to be proved. What Ruysh supposed always occurred, with Cruveilhier, we admit to occur in some cases, that the Fallopian tubes take up the pus from the womb and deposit it on the peritoneum of parturient women. This may likewise sometimes take place in cases of blennorrhagia. If in the healthy state, the Fallopian tubes are so clogged with tenacious mucus that capillary attraction is impossible, when they become chronically inflamed, their tunics are hypertrophied, and their canal enlarged, so that they may convey pus from the womb to the peritoneum, as most likely occurred in Dr. Mercier's case.

RHEUMATIC OVARITIS.

Although Krüger, Merat, Drs. Fleetwood Churchill, and Copland, have given cases of this disease, it is one of most rare occurrence; we

will make but few observations on the subject, before relating an interesting case to illustrate its variety. It is said to occur, like rheumatism of the uterus, during the last months of gestation, during labour, and in the puerperal state, and to be caused by the action of cold air on the excessively expanded, and often unprotected, parietes of the abdomen. In addition to the usual symptoms of the disease, there are sometimes violent paroxysms of pain, and intense perspirations.

The following case is given by Dr. Copland as one of rheumatic ovaritis, but Valleix remarks that nothing proves that it was so.

Case 54.—Mrs. P., of Walworth, was attacked, July 15, 1821, with excruciating rheumatic pains in the loins and limbs, increased on the slightest motion, or on attempting to turn in bed. She was in a profuse perspiration, and her pulse was full, strong, and about 100. She attributed the attack to sleeping in a damp bed when travelling. She was about twenty-six years of age, strong, plethoric, and of the sanguine temperament. The catamenia were usually very abundant, and seldom at longer intervals than fourteen days; their occurrence was soon expected. She had never been pregnant. About three days after the commencement of the rheumatic attack, and whilst I was attending her, she suddenly experienced an attack of acute pain in the hypogastrium, a little above each groin. Soon afterwards, two tumours could be distinctly felt in the regions of the ovaria. They were extremely painful, and tender upon pressure. The pains in the limbs were greatly abated, but pain was still complained of in the loins. All the inflammatory symptoms continued; the bowels were costive; the urine scanty, and high-coloured, with frequent calls to micturition. The countenance was flushed, animated, and excited; the temper variable and hysterical. The treatment consisted of one bleeding from the arm, of repeated doses of calomel, ipecacuanha and opium combined, saline aperients being interposed, so as to keep the bowels freely open; of the application of a considerable number of leeches below each groin, and of the warm hip-bath. Four or five days after this attack commenced, the catamenia came on, and the pain, tenderness, and swelling gradually disappeared from the hypogastrium. This lady was some years afterwards the subject of abscess between the vagina and rectum, which opened into the latter. She subsequently was attacked by gout, and ultimately became consumptive, from an excessive addiction to brandy, but was carried off by delirium tremens, before the pulmonary disease had reached its utmost limits.

INFLAMMATION OF THE FALLOPIAN TUBES.

As this disease is only known by its fatal terminations, we will reserve it for our next chapter.

CHAPTER XXII.

TERMINATIONS OF ACUTE OVARITIS.

As in all other organs of the human frame, when inflammation has arrived at suppuration, the pus deposited in the ovaries may be absorbed into, or ejected from, the system.

RESOLUTION.

Contrary to the opinion of Boyer, and many others, whose memory was particularly impressed with the most fatal consequences of ovaritis, we may admit, with Loënhardt, F. Churchill, and others, that resolution is not an uncommon termination of idiopathic ovaritis. It often occurs as a result of active treatment, when pus is diffused, and infiltrates the tissue of the organ, and has been known to happen when a considerable quantity of pus had collected. Martin Solon—*Dict. de Médecine*—relates a case, wherein fluctuation in the ovarian tumour was so evident, that he had fixed the day for opening it. But, on examining the tumour previous to the operation, he thought it was less than when he had previously explored it; he therefore put off the operation, and Nature dispersed the tumour, by absorbing its contents; 6 of our 26 cases terminated by resolution. One is related by Dr. Chereau:

CASE 55.—Madeleine——, aged twenty-two, had always enjoyed good health till the age of seventeen. From that period she constantly complained of a feeling of oppression, and difficulty of breathing, which was aggravated every month. Her catamenial periods were preceded by considerable pain in the lumbar region, twitches in the thighs, weight in the hypogastrium, and colic. She was habitually constipated. In 1840, without any known cause, she was seized with symptoms of inflammation in the abdomen, which, if we may judge by the description of a non-medical person, were those of peritonitis. October 24th, 1842, she had for two days been suffering from severe pain in the lower part of the abdomen, with a feeling of weight in the groins, and twitches in the thighs and loins. The catamenia were due, but had not appeared. The face was flushed; skin hot, but moist; the pulse was 80, and fuller than natural. She complained of severe headache, difficulty of breathing, and on the previous evening she remarked that her sputa were tinged with blood. No stool for the

last forty-eight hours. The abdomen was painful on pressure over its whole extent, but more especially at the left iliac region, where there was a small tumour of the size of a hen's egg; it was somewhat moveable, and very painful to the touch. On examining the chest, pulmonary engorgement of the right lung was discovered, and this was probably occasioned by the presence of tubercles; the left lung was healthy. The patient was copiously bled from the arm; fifteen leeches were applied to the groins; foot-baths, with vinegar, were employed; demulcents, and slightly purgative enemata, were likewise ordered. Under the influence of this antiphlogistic treatment, the headache and difficulty of breathing were much relieved; the catamenia appeared the next day, and continued for three days in a much larger quantity than usual. On the fourth, the swelling of the left iliac region began to diminish, and from that period the patient was completely convalescent. She continued well till the following June, the appearance of the catamenia, however, being always preceded by pains in the bowels. He adds: "I was then requested to see my patient a second time, and found her in a state so similar to that already detailed, that I need only say, that the same treatment was pursued, with the same results."

ELIMINATION.

But when the purulent collection is so considerable that its absorption would be detrimental to the human body, or when the vital powers are inadequate to this task, the matter then works its way out, in accordance with that providential law which gives a centrifugal impulse to all that is noxious in the system.

Sometimes the bursting of the abscess occurs without the patient being aware of it; at others, she feels as if something had snapped within her. The abscess may burst, empty itself, refil, and burst again, and do so repeatedly, as in 2 cases seen by Chomel, and in 1 by Dr. Oldham, shown us at Guy's Hospital; or, after having emptied itself by one outlet, it may do so by another, or by several at once. In 17 idiopathic cases out of 26, pus was eliminated from the ovarian abscess. In 3 cases it burst into the peritoneum, in 10 into the rectum, in 3 into the vagina, in 1 case an incision allowed its passage into the vagina. In 3 out of the 26 cases the rupture took place at a menstrual epoch, at which time there is often an aggravation of symptoms, and sometimes a relapse.

The peculiar structure of the ovaries during the puerperal time, explains why puerperal ovaritis so often terminates by elimination of the pus, which took place in 16 out of 17 cases of puerperal pelvic abscesses collected by Grisolle.

In enumerating the divers outlets contrived for the evacuation of pelvic tumours, we shall distinguish those which open externally, whether directly or indirectly, on to the skin, or into the vaginal, intestinal, or vesical outlets, and those which open internally, as into the peritoneal cavity.

CUTANEOUS OPENING.

Ovarian abscesses seldom seek this vent. It did not occur in any of our cases of idiopathic ovaritis; it was more frequent in the puerperal variety, but less so than with iliac abscesses. When they open on the surface of the skin, the opening usually takes place in one of the iliac regions; as the abscesses have generally attained a large size, the prognosis is unfavourable. Montault describes a case wherein the pus, being conducted by the round ligament, passed through the inguinal canal.

VAGINAL OPENING.

This is a frequent and felicitous termination of ovarian abscesses; which void their contents through the medium of the Fallopian tubes and the uterus, or more frequently, by direct communication with the vagina. An instance of the first is mentioned—*Mémoires de l'Académie des Sciences*, 1700:—A nun, who had never menstruated, committed suicide, and, on a *post-mortem* examination, pus, with hair embedded in a fatty substance, was found in one of the ovaries; the corresponding Fallopian tube, communicating with the ovarian cavity, was full of pus, and emptied itself into the uterus and the vagina. Cruveilhier, on dissecting a body, found the contents of a purulent cyst on the eve of passing through the oviduct into the uterus. On detaching the fimbriated extremity from the ovary, pus issued from the Fallopian tube which had contained it, and on pressing the tube in the direction of the uterus, the matter also flowed from the uterine orifice of the oviduct. Madame Boivin mentions having seen an undoubted case of pus passing from the ovary by the Fallopian tube into the cavity of the uterus; there was no other means of explaining the sudden discharge of two glassfuls of viscid greenish pus, which flowed unmixed from the os uteri, to the great relief of the patient. Chaubon described such cases in his treatise on "Diseases of Women;" and we have before given a case, wherein Vidal de Cassis believed a similar communication to have taken place.

Dr. M'Intyre informs us that he has had under his care a lady, thirty-five years of age, in whom, without any appreciable cause, acute ovaritis manifested itself: the abscess burst, and for several days a considerable quantity of green fœtid pus was voided by the vagina; the patient then recovered.

These cases must, however, be considered exceptional, for the pus is generally voided by a direct communication between the abscess and the vagina, although it may be difficult to detect even by a speculum examination where the opening took place. This termination has been frequently met with by both English and Continental practitioners, and has pointed out the best mode of treatment to which we can possibly resort in similar cases. Sometimes the ovarian abscess will communicate with various surfaces of the human body. This will be seen in some of the cases we shall relate; but one of the most interesting is mentioned by Dugast, who met with it when dissecting the body of a woman who died of consumption. He found the left ovary, about the size of a hen's egg, adhering by one of its extremities

to the sigmoid flexure of the colon, and by the other to the uterus. The intestine communicated with a tuberculous abscess of the ovary; and where the ovarian tumour was attached to the uterus, the tissue of the latter was softened to such an extent, that a similar communication between the ovarian abscess and the uterus would have shortly taken place; so that, if the patient had lived a little longer, the fæces would inevitably have passed into the ovarian abscess, and thence into the uterus, and would thus probably have been voided by the vagina. This termination only occurred in 3 of our 26 idiopathic cases, which shows that in such it is much less frequent than in the puerperal variety.

INTESTINAL OPENING.

Although it has been affirmed by Velpeau and others that this termination is as favourable as that wherein the pus is voided by the vagina, we believe that the assertion is not borne out by facts; and it stands to reason that the prolonged passage of pus from the vagina must be less prejudicial to the system than the protracted contact of this fluid with the internal surface of the intestine, the entire mucous coat of which is more or less devoted to the absorption of what is to nourish and renew our frame. In these cases, though the cure of the ovarian abscess may progress favourably, still the patient may sink from the debilitating influence of colliquative diarrhœa. Of the ten patients in whom the abscess burst in the rectum, after prolonged suffering, one died of intestinal ulceration, and another had not recovered her strength after eighteen months of illness. It follows as a consequence of what we have stated, that the higher the opening into the intestinal cavity is situated, the greater will be the danger; and that there is a better chance of cure in cases of rectal communication—Andral, Nauche, Boivin, Montault, Imbert, and Velpeau—than in those where the abscess communicates with the cæcum or the colon. We must also bear in mind, that in communications between ovarian abscesses and the intestines, the opening has sometimes a valvular disposition, so that, although the pus can enter the intestines, the contents of the intestine cannot obtain ingress to the cyst.

We append a case lately published by Mr. Bartrum, of Bath:

Case 56.—Four months before the death of a patient, thirty-two years old, her belly swelled, and from that circumstance, as well as from severe pain occasionally felt in the bowels, she imagined herself pregnant. A month before her death, she felt a sensation as if something had burst internally, which she likened to the explosion of a pistol. This was followed by vomiting, constipation, and death; and on opening the body, an abscess was found in the left ovary, and an opening, by which it communicated with the rectum, was situated in the sigmoid flexure of the colon.

VESICAL OPENING.

Communications of abscesses with the bladder are not of frequent

occurrence, but have nevertheless been observed by Dupuytren, Husson, Dance, Martin, C. Hawkins, H. J. Johnson, and Dr. Gordon. In many of these cases, the passage of pus on the bladder gave rise to no irritability, and the urine did not seek to escape from the bladder into the cellular tissue. In Dr. Gordon's case, the pus came from an ovarian puerperal abscess; and probably from an idiopathic ovarian abscess in that which occurred to Dupuytren.

PERITONEAL OPENING—PERITONITIS.

The peritoneum is, generally speaking, an effectual boundary to the inflammatory process established in the subjacent organs; still it often happens, particularly in the puerperal state, that inflammation passes from the ovaries to the serous membrane which covers them.

We have already inquired into the various effects of local peritonitis, and if general peritonitis seldom occurs, its fatality prompts a careful consideration of whatever may cause it, and moreover the study of acute peritonitis affords the best clue to understand its milder form which is of daily occurrence. General peritonitis is the result of the effusion of pus or of blood from the ovaries, and from the Fallopian tubes.

The vicinity of the ovarian abscess to the peritoneum would lead us to infer that the former frequently empties itself into the latter; and if this seldom takes place, it is an additional proof of the operation of that conservative principle which protects our frame. We know that under other circumstances pus may be effused into the peritoneum, may become circumscribed or isolated by false membranes, and be partially or altogether absorbed in course of time; but we do not remember an instance of the patient's recovery after the effusion of ovarian pus into the peritoneum. It was fatal in 3 out of our 26 cases in which it occurred, and in 2 other cases the lesions of general and acute peritonitis were found after death.

Dr. Churchill states that the escape of pus into the peritoneum, where it gives rise to peritonitis, is always alarming, but not always fatal; and he refers to three of the cases he has detailed, but which do not seem to prove his position, for in these there is no evidence of pus having been effused into the peritoneum. The fatal results of purulent effusion into the peritoneum do not depend on the amount of pus effused, but on the irritating nature of the fluid; for in Négrier's case the abscess was very small; and here we will remark how very different is the prognosis in cases of rupture of ovarian cysts, with effusion of their contents into the peritoneum, provided they contain only a bland albuminous fluid. We believe we were the first to establish, by statistical tables, the innocuousness of this accident, by our papers on ovarian dropsy, published in the *Lancet*—1848—and subsequently in the *Lond. Med. Gaz.*, and we are glad to find that our conclusions have been fully confirmed by Dr. Simpson—*Edin. Monthly J. of Med.*, Dec., 1852.

With respect to hemorrhage from the ovaries producing peritonitis, we think this occurred from rupture of the softened and highly vascular

stroma, in those *post-mortem* examinations where the shreds of the ovaries were found in the abdomen mingled with sanious pus.

The *post-mortem* appearances of a case which will be recorded in treating of sanguineous pelvic tumours, show that acute peritonitis may be caused by ovarian hemorrhage during a menstrual period.

In 3 out of our 26 cases, young married women, previously fruitful, remained sterile after the acute ovaritis; and Pr. Pistocchi mentions that in one of his patients, after acute ovaritis, there was an absence of that normal amount of sexual desire which had previously existed.

INFLAMMATION OF THE FALLOPIAN TUBES.

At the period of puberty considerable changes are induced in these organs, independently of the sanguineous congestion spoken of above. At the periods of the catamenia, the Fallopian tube with its fimbriated extremities is raised, whilst the pavilion proceeds to encompass the ovary and spread itself over one part of its exterior surface. We have ascertained these changes by examination, and several persons have remarked the same in cases of hysterical, as well as of pregnant women. So say Dugès and Mme. Boivin; and we recal the circumstance of the frequent adaptation of the Fallopian calyx to the ovary, as explicative to a certain extent of those cases wherein inflammation renders permanent an otherwise temporary union. We have already shown, page 180, that inflammation of the Fallopian tubes is extremely frequent, and that it entails sterility by intercepting the means of communication between the ovaries and the womb. We cannot better exemplify inflammation of the Fallopian tubes, than by a case recorded by Mr. Harrison—*American Jour. of Med. Sciences*, vol. xv.

Case 57.—May 18th, 1834, I was requested to meet Dr. Talbot in the case of Mrs. T., who had been ill for two or three weeks. I found her with fever, hot skin, and a quick small pulse—tongue with a slight fur upon it—bowels easily acted on by medicine—stomach affected with incessant nausea, and incapability of retaining either medicine or food. There was a tumour in the left iliac fossa, just below the anterior-superior spinous process of the illium; which was not very painful on the application of the fingers. There was great pain in the sacrum and down the left thigh. Agony was produced by the introduction of the pipe of the syringe into the rectum, and there was much difficulty in administering an enema successfully, from some obstruction in the gut, either from a diseased condition of its coats, or from some adventitious body pressing on and diminishing its calibre. Upon examination per vaginam, I found the os tineæ tumid and irritable, the lady complaining greatly on pressure of the finger on the part. She was of a delicate frame of body, but had always enjoyed excellent health until within two months. She had been married six months, and had menstruated regularly up to this period; but, during the last two catamenial efforts, she experienced considerable pain, and shortly subsequent to the last the tumour made its appearance. She passed through two periods without any

additional pain; the fluid discharged at each time was healthy in its aspect, except that it was not so highly coloured, and it was diminished in quantity. In a few days after my last visit she died. Upon opening the abdomen, the stomach was found entirely natural in its appearance, the mesenteric glands were enlarged, and the lungs contained some miliary and aggregated tubercles, but not in a state of suppuration. Both Fallopian tubes were enlarged, especially the left, which was much distended, and prominently pushed upwards, the fimbriated extremity being adherent to the left ovarium. The ovaria were enlarged, and a copious deposition of coagulable lymph had formed a mass of morbid substance between the ovaria, which matted them together, and which was firmly united to the rectum, and pressed upon that gut. There was about an ounce of pus in the left Fallopian tube, and about three drachms in the right tube. The tubes were impervious to a small probe from the uterus. The os tineæ was tumefied and red, and there was a slight lining of pus on the internal surface of the uterus. The rectum and bladder were both implicated in part in the morbid action of the uterine apparatus, their coats being thickened or hypertrophied. Here is another instance of the persistence of a menstrual *show*, when all communication was effectually stopped between the ovaries and the womb.

Dr. Meigs records—p. 325—an instance of puerperal fever probably originating in this disease.

Case 58.—I attended a lady in her accouchement in June, 1841. She had a favourable labour, and all the usual circumstances of a lying-in woman attended her for a period of several hours, when she complained of a heavy and distressing pain in the region of the right Fallopian tube. Suddenly the pain began to spread over the lower belly, and the constitution evinced its participation. The pulse became alarmingly excited and accelerated, and she was soon seen to be far gone in puerperal peritonitis. As she had complained of pain in the right side for some time before the accouchement, I feared that some local malady, suddenly aggravated, was at the foundation of the danger. She died; and, upon inspecting the abdominal cavity, much pus and sero-pus were observed. But what most particularly struck me was the state of the Fallopian tube, which was much larger than a stout man's thumb; and its cavity, which would freely admit of the introduction of a finger into the tube, had been filled with pus. I have little doubt that acute inflammation of the tube, sealing the ovarian extremity of it, and afterwards filling and greatly distending its calibre with pus, discharged at length into the belly, is the true rationale of this fatal attack.

As an example of acute peritonitis from rupture of a Fallopian abscess, we extract from the *Journal Hebdomadaire*—Tom i., p. 114—a case published by M. Dalmas, wherein this form of disease most probably followed ovaritis.

Case 59.—Mary D., aged thirty-seven, the mother of three children, the youngest of whom was seventeen, entered La Charité on the 2nd of September, 1828, having always enjoyed good health until within the previous six months. She first complained of constipation, with

pain in the right iliac region; afterwards of darting pains in the right thigh, of sickness, and of colics.

In the previous month, she felt pain in the left iliac region, and was conscious of a tumour rising from that spot, causing a painful numbness on the corresponding side. M. Andral distinctly felt the tumour, about the size of an apple; it was painful on pressure, and he considered it ovarian. The left limb was weak, particularly on walking: vomiting and colic came on every day, at irregular intervals. M. Andral applied twenty leeches over the tumour, at three different times. On the 6th and 7th of September the catamenia appeared, and on their appearance the vomiting and constipation ceased. These symptoms, however, returned, the pain in the right thigh reappeared, and on the 29th of September the catamenia again began to flow. The patient became worse, diarrhœa supervened, weakness increased, and she died on the 9th of October.

At the *post-mortem* examination, considerable purulent effusion, and false membranes, were found in the abdomen. To the left was a tumour, intimately connected with the rectum, which, on being opened, showed a circular perforation, about as large as a goose-quill, communicating with the tumour; this, on pressure, became more evident, for pus was seen to pass from the tumour into the rectum. It was afterwards found that this tumour was nothing more than the Fallopian tube, considerably dilated, and in a state of suppuration. That portion of the tube which still retained its ordinary appearance, did not communicate with the interior of the tumour by a small aperture, but by a *funnel-shaped* prolongation of the tube. Behind this was a smaller tumour, which proved to be the ovary, by its fibrous coat and general appearance. It also contained pus, but there was no communication between the purulent cavities. On the right side of the uterus, an inverse disposition was observed. The right ovary, which formed the principal part of the tumour, was about the size of a hen's egg, and full of thick green pus. The right Fallopian tube was also gradually increased in size, and from the uterus to its extremity was inflamed, and contained pus, but the womb and the bladder were perfectly healthy.

This case is suggestive of many reflections. First the right and then the left ovary became subject to an inflammation, which was transmitted to the Fallopian tubes; but no cause can be ascribed to the inflammation of the ovaries. Menstruation was deranged, and then suppressed; but, when the ovaries and Fallopian tubes must have been in an advanced state of disorganisation, how was it that the menstrual flow appeared twice previous to the patient's death? It proves that, when a hemorrhagic habit has been set up in woman by menstruation, it may again appear, in the absence even of the accustomed ovarian stimulus. Is not man subject to periodical hemorrhoidal or other hemorrhages? This observation no more proves the uterus to be the seat and organ of menstruation, than the flowing of blood from an ulcer at the monthly epoch, shows its diseased surface to be the seat of menstruation. Dr. Pauly relates the case of a woman who presented an accidental and complete occlu-

sion of the vagina, the consequence of a laborious confinement. She was two months at the hospital, during which time she menstruated twice, with violent pains resembling those of metro-peritonitis. At both epochs she was examined with the speculum, and it was easy to see the blood perspiring from the whole vaginal cavity.

We have thus shown that collections of pus in the Fallopian tubes may burst, and pour their contents into the peritoneal cavity, or into the womb and adjacent organs; the pus may likewise be effused into the sub-peritoneal cellular tissue of the broad ligaments, and then travel to a great distance.

The causes of inflammation of the Fallopian tubes are the transmission of inflammation from the ovaries, as in the preceding cases, or from the womb, as in the following, related by Mme. Boivin:

Case 60.—A woman, after a recent abortion, was affected with inflammation of the uterus and the peritoneum, of which she died. The ovarian extremity of the left Fallopian tube was of the size of a small hen's egg, and adhered to the ovarium, which it almost surrounded; it was red, very vascular, and contained some fluid blood; the parietes of this sac were half a line in thickness; the right Fallopian tube was obliterated at its dilated extremity, which was as large as the finger, without fimbriæ, and adhering to the ovarium by cellular adhesions; some fluid blood was found within it; the remains of a small lacerated serous cyst were suspended from the ovary on the same side.

In other cases, the retention of the menstrual flow seems to have been the cause of inflammation of the Fallopian tubes; their canal has been found much larger than usual, and ruptured in one or more places, as if by the pressure of the retained blood. Several examples of this occurrence will be found in our chapter on sanguineous pelvic cysts.

The oviduct may be obliterated at both its extremities, and its inflamed surface may be distended with pus or blood, forming a tumour, which cannot be distinguished from an ovarian abscess, and which, like an ovarian abscess, has been known to empty itself by an opening through the abdominal parietes, or into the peritoneal cavity. It appears that such cases have been met with by De Haen—*Ratio Medendi;* Heyfelder—*Rust's Handbook of Surgery;* Orde—*Lond. Med. and Surgical Journal*, 1834; W. Adams—*Amer. Journal of Science*, 1826; *Actes des Erudits de Leipsick*, anno 1693; Ruysch's *Observationes Anatomico-Pathologicæ; Hufeland's Journal*, Nov., 1819.

CHAPTER XXIII.

DIAGNOSIS AND PROGNOSIS OF ACUTE OVARITIS.

It is more difficult to establish a correct diagnosis of disease affecting the abdominal organs than to do so for other parts of the body. The difficulties of abdominal diagnosis are so fully admitted, that many attempts have been lately made to give it greater precision by Drs. Williams, Ballard, and ourselves.

I. When an ovarian abscess exists, a circumscribed tumour will be felt on one side of the pelvis, by means of a vaginal or a rectal examination.

II. The tumour will generally have a globular form, and feel elastic, doughy, or fluctuating.

III. It will have a certain amount of mobility.

I. This proposition requires no comment, but we shall soon indicate some exceptional cases.

II. The areolar tissue surrounding our organs, generally limits the pathological influences to which they are liable; thus inflammation of the cœcum seldom originates a pelvic abscess, neither does an ovarian abscess when it is idiopathic. In cases of puerperal ovaritis, on the contrary, inflammation, originating in the ovary, is frequently transmitted to the surrounding cellular tissue, and a pelvic abscess is discovered, by its pointing externally when it is large, and when small by an accurate investigation after the subsidence of general symptoms; so that while puerperal ovaritis is generally imbedded in a voluminous abscess attached to the pelvis, idiopathic ovaritis, on the contrary, is globular, moveable, and somewhat *detached* from the pelvis. It should not only be globular, but feel doughy, elastic, or give a sensation of fluctuation, to be best felt by introducing both indicators, one into the vagina and the other into the rectum.

III. The tumour should have a certain degree of mobility, for it stands to reason, that if any space can be felt to exist between a circumscribed tumour and the iliac bone, it cannot be an iliac abscess.

These are the physical signs of an ovarian abscess, supposing it be not possible to detect it through the abdominal walls; and we shall now show how its diagnosis may be complicated by disease of the neighbouring organs.

Metritis imitates Ovarian Abscess.—On the first appearance of the symptoms of idiopathic ovaritis, the patient is generally supposed to be suffering from metritis, and unless a careful examination

be made, or the practitioner's attention be drawn to pus having been passed by the vagina or by the rectum, the patient is treated for that complaint. Thus Portal observed, that we often meet with patients whose symptoms have been attributed to inflammation of the uterus, but who, after a lapse of time, and subsequent to their apparent recovery, become the subjects of fulness and great intumescence in one or in both of the iliac regions; on inspecting the bodies of such persons, the uterus is found healthy, while the ovaries and ligaments are diseased. Metritis is, however, attended by a greater amount of fever than ovaritis; there is more sickness, and the tumour can generally be detected occupying a central position above the pubis. The pain is more constant, lancinating, and unaccompanied by those far-spreading radiations which are so frequent in ovaritis; still, the difficulty can only be solved by a minute investigation. The regularly swollen central tumour felt by the finger to be a continuation of the neck of the womb, will not permit metritis to be confounded with ovaritis, except the womb had been bound down by previous inflammation to one side of the pelvis, in which case the finger would detect its absence from its central position. The morbid permanence of puerperal hypertrophy of the womb, which is far from being uncommon, may, when not confined to a central position, be mistaken for an ovarian swelling.

The shrewdest and most experienced may be deceived, as in the following instance, abridged from that related by Pr. Pistocchi.

Case 61.—A strong, healthy woman, who had all her life been subjected with impunity to every vicissitude of weather, and in whom menstruation had been always regular, suffered repeatedly from flooding, but as she was then fifty, she allowed this to go on for three months, till pain in the hypogastric region, and other symptoms of peritonitis became so violent, that she was obliged to seek advice. She was relieved by nine ounces of blood being taken from the arm, emollient enemata, and fomentations. Another bleeding to the same amount, and the application of numerous leeches to the inguinal regions, diminished the intensity of suffering, and permitted the hand to detect a solid globular and moveable tumour, occupying a central situation, and dipping into the pelvis. On a vaginal examination, the neck of the womb was found greatly increased in size, and, in moving it, the fingers moved the tumour. Her state improved, and Pr. Pistocchi hoped that all danger was passed, when, on the twenty-eighth day of illness, rigors, and other symptoms of suppurative fever came on, and on the forty-sixth day she died. On opening the abdomen, signs of general peritonitis were found, and an oval tumour, ten centimètres long and seven broad; its apex was the womb in its natural position, and the free end of the tumour was constituted by the agglutination of both ovaries above the fundus of the womb, the right ovary presenting in front, and the left behind it, the whole being united by false membranes. Both ovaries contained ℥vi of green pus, and their tissue was so destroyed that in some places the peritoneal covering alone remained.

If the patient had recovered sufficiently to permit a careful local

examination, the case must have been considered uterine. Nothing else would have been detected but a central tumour, evidently forming one with the womb, added to this the enlarged neck of the womb, the continued menorrhagia, what more was wanted to diagnose uterine disease?

One word respecting the cause of this fatal complaint. After bearing children during the first years of marriage, connexion became painful, hysterical symptoms appeared, and the patient ceased to breed; so, most likely, she suffered long from uterine disease, and at the cessation of menstruation ovaritis supervened.

A Permanent Deviation of the Womb is susceptible of being subtracted from the morbid problem by means of the uterine sound, should great local pains cause the deviation to be ascertained. Nonat affirms—*Gaz. des Hôpitaux*, March 5, 1850—that he has seen *le phlegmon des ligaments larges* confounded with uterine neuralgia, and that, in one of his patients at *l'Hôpital Cochin*, the neck of the womb had been slit to cure this affection.

Iliac Abscess imitates Acute Ovaritis.—This so frequently occurs, that they are almost always confounded under the name of pelvic abscess, a common complaint. Valleix mentions, as an instance of their frequency, that Mr. Fauvel, in his female ward—not a lying-in ward—at the Hôtel Dieu of Paris, had met with 20 cases in a short space of time. Dr. F. Churchill also says that abscesses of the uterine appendages are much more common than has been supposed, and adds, that since publishing his paper in the *Dublin Medical Journal*, he has seen 12 instances in unmarried as well as in married women.

If these diseases are so frequently confounded, it is because they arise in the midst of similar acute abdominal symptoms, and both occupy a lateral position in the pelvis, and cause uneasiness of the limb of the side affected; but notwithstanding Dr. Battersby's assertion, that no information can be drawn from the position of the limb, because its retraction and the impossibility of extending it is common to so many affections, we have found, with most of those who have written on the subject, that although in both complaints the free motion of the limb was impeded, its marked retraction and semiflexion coincided with pelvic abscess. It is in these cases, and not in ovaritis, that Berard and Bricheteau have seen idiopathic coxalgia so simulated, that the diagnosis was only made clear by the passage of pus by the rectum. Great numbness and temporary paraplegia have been seen by Nonat to accompany pelvic abscess. Dr. F. Churchill has suggested that "if the swelling be low in the pelvis the patient is unable to straighten the limb on that side, but that this difficulty is not felt when the swelling rises above the pelvis." We have not found this to be the case. A digital examination will, in general, clear the doubts left by the inspection of the patient, for while an idiopathic ovarian abscess is felt as a globular, circumscribed, and somewhat moveable tumour, iliac abscess, on the contrary, feels as a boggy infiltration of the cellular tissue lining the iliac bone, and circumscribing the walls of the rectum and vagina, to which it sometimes gives the consistency of brawn, and the limits of the swelling are in-

distinct. While an ovarian abscess is seldom larger than a good-sized orange, iliac abscesses often fill the pelvis, and rise visibly above its brim. Still the most experienced may be puzzled, as in a case related by Mr. Barth to the *Société Médicale d' Observation* of Paris, wherein a pelvic tumour sent into the vagina a prolongation which filled it half-way, and if an abscess arises in an ovary bound down by previous inflammation to the sides of the pelvis, it will neither be round nor detached from the pelvis. It will be remarked, that we have had in view the diagnosis of the idiopathic ovaritis, as, for evident reasons, it will, in general, be impossible to affirm that a puerperal pelvic abscess is caused by an ovaritis.

Psoas Abscess may imitate Ovarian Abscess.—We must remember that this disease frequently arises after a snap; the pain across the loins, the difficulty of straightening the spine, the pain on walking, the uneasiness and swelling of the limb, should prevent a mistake.

Iliac Peritonitis may imitate Ovarian Abscess.—How frequently this occurs in the pelvic cavity, in the vicinity of the ovaries, has been already noticed, but should tumefaction be detected by an external or internal examination, it will be found diffuse, and the hand will pass insensibly from the inflamed to the sound tissues. If, however, in consequence of partial peritonitis, a collection of pus becomes circumscribed in the recto-vaginal pouch, the diagnosis is extremely difficult. Acute symptoms will warn the practitioner that inflammation is at work, and the tumour, even by the most careful investigators, would probably be taken for an inflamed ovary, fallen and confined in the recto-vaginal pouch. If the pus obtain exit by the vagina, it would confirm the diagnosis. A case of this description occurred lately at St. Bartholomew's, and baffled the sagacity of all who saw it. The disease was caused by the sudden passage from a regular course of life to one wherein the generative organs were abusively used. The patient appeared to be five months gone with child, but she menstruated regularly, and the uterine sound showed the womb to be unimpregnated. It was thought a case of extra-uterine pregnancy by some, an ovarian cyst by Dr. West, and Mr. Stanley owned he knew not what it was. An exploratory needle brought away pus; the abscess was tapped, but still it ruptured six days after, and peritonitis killed the patient. The abscess was ascertained to have arisen between the rectum, the vagina, and ovaries. The left ovary was healthy, but it is said—*Lancet*, Nov. 2, 1850—that the " right was rather large, and contained several cavities which would have admitted a pea; these were well defined, and were filled with a yellowish white, cheesy substance, like softened tubercles; these were the result of the natural but over-excited functions of the parts."

Sanguineous Pelvic Tumours may imitate Ovarian Abscesses.—When sanguineous pelvic tumours are small, and fill the recto-vaginal space like a ball, the mistake can be understood, particularly as both diseases often arise in the midst of menstrual disturbance. At this early stage of the complaint, if the tumour be sanguineous, an exploratory puncture will bring away blood instead

of pus, and as the tumour by its gradual development soon fills the pelvis, it cannot do so without offering signs which will prevent mistakes.

STERCORAL TUMOURS IMITATE OVARIAN ABSCESSES.—A stercoral tumour sometimes assumes a globular form; it may be somewhat moveable on one side of the pelvis, and may be extremely painful, but flatus, vomiting, diarrhœa, or constipation, must have existed some time previous to the appearance of the tumour, which may be dispersed, and shown to be stercoral by a purgative treatment, and by copious injections per rectum. We have shown how much more frequently than is generally supposed, idiopathic ovaritis, by pressing on some part of the lower intestine, causes constipation, so obstinate that the case is considered to be ileus. Constipation was obstinate in 7 out of our 26 cases; ileus was diagnosticated in 2 cases out of the 7. The following is one of the two, which we condense from the *Gaz. des Hôp.*, March 18, 1852, and it occurred in the practice of M. Chomel:

CASE 62.—A delicate-looking woman entered the Hôtel Dieu of Paris, Dec. 17, 1851. She first menstruated at thirteen, had a child eight years before she came to the hospital, and menstruation continued regular until the last year, when it became irregular, and a fortnight previous, instead of its appearing, the patient suffered from great constipation and abdominal pains, which were most intense in the right iliac region, where there was swelling; there was also fever. A pill containing one-fifth of a drop of croton oil was given every hour, a bladder of iced water was kept on the abdomen, cold water was injected per rectum, and twenty leeches were applied to the right side. This treatment caused copious evacuations, and on the 19th the swelling on the right side had nearly subsided, and the pulse was subdued; fifteen more leeches were applied, and the same measures continued. On the 27th the menstrual flow appeared abundantly, but brought no relief; on the contrary, after some increase of abdominal suffering, green vomiting came on, with agonising pain in the left iliac region, and meteorismus. Thirty leeches were applied to the left iliac region, mercurial applications and opium were given until they affected the system. These symptoms lasted, with alternations of constipation and diarrhœa, until January 13, when a swelling in the left iliac region became visible, and the finger, whether in the vagina or rectum, felt the tumour filling the left side of the pelvic cavity. She then had nightly perspirations, and aphthæ, and died February 23rd.

On opening the body, the extensive agglutination of the intestines showed general peritonitis, and there was a well-circumscribed peritoneal abscess, which opened into the rectum by three perforations. Where the rectum joins the sigmoid flexure of the colon, a round tumour, about the size of an orange, pressed the gut, *to which it intimately adhered.* This was the left ovary, hard but fluctuating, and it was a multilocular abscess full of green pus.

The right ovary was healthy, but adhered firmly to the rectum; the uterus was small and sound, formed one with the ovarian abscess.

Remarks.—An inspection of the body could alone clear up the obscurity of this case. The ovarian abscess, by riding on the rectum, produced the mischief, causing the constipation and the stercoral enlargement in the right iliac region, which led astray one of the best pathologists of Europe, as it has done others in similar cases. It caused the intestinal perforations ; but as these often occur as a result of tubercular disease, and as the patient suffered from cough towards the end of her complaint, a careful search was made for tubercles ; none were found, and the intestinal perforation can be only understood as the result of a communication of inflammation from the tumour to the intestine on which it pressed, and which was, moreover, for several days, much increased by drastic purgatives, and then by the menstrual molimen. With regard to the cause of the complaint, the case at least shows what may sometimes be expected as a consequence of the long-continued neglect of menstrual irregularities. The diagnosis was faulty, since the reason of the intestinal obstruction was not suspected, until too late. The treatment was unfortunate. The cold water enemata and ice applied to the abdomen were more calculated to increase the ovarian inflammation than to combat it, while the croton oil must have added fuel to fire.

PROGNOSIS OF ACUTE OVARITIS.

The greatest obscurity reigns over this subject, because, in general, the most dangerous cases are alone recorded.

We know nothing relative to the mortality of patients affected with puerperal ovaritis uncomplicated by other morbid lesions; all such cases being confounded with every other variety of pelvic tumours. Montault, judging from 3 cases of ovaritis uncomplicated by *other* puerperal complaints, considered their prognosis less alarming than that of iliac abscesses, inasmuch as none of the 3 patients died. Dr. Bell found 23 deaths out of 93 recorded cases of pelvic tumours, most of which were puerperal. Marchal de Calvi states that, out of the 50 cases of puerperal pelvic tumours he collected, 13 were fatal. Of Dr. Fauvel's 20 cases of pelvic tumours none were fatal, although several opened either into the rectum or the vagina.

With respect to the prognosis of idiopathic ovarian abscess, we have 12 fatal cases out of 26, but then it must be borne in mind that we purposely avoided including in our list many cases of acute ovaritis about which there could be a doubt. We think, however, that the mortality of acute ovaritis is greater than is generally admitted, and the danger of an ovarian abscess bursting into the peritoneum, instead of into the vagina and rectum, is as 3 to 12. This will cause the practitioner to give a guarded prognosis; it will further convince him of the necessity of a minute investigation of those cases, which are so frequently set down as inflammation of the bowels, as metritis, or even intestinal obstruction; and, if the case be ovaritis, a radical cure had better not be promised, for the disease may prove as interminable as the menstrual function, from which it may receive a monthly aggravation. Should it turn out otherwise,

the medical adviser will then earn more credit than he really deserves—a benefit to which he is fairly entitled, as some compensation for the blame he is often obliged to bear when his best has been done. The practitioner should not despair, even when the case has been long protracted, for one of Mr. Wainwright's cases of pelvic abscess, which was only opened a year after the confinement in which it originated, finally healed at the end of the tenth month, bursting at intervals during that period.

CHAPTER XXIV.

TREATMENT OF ACUTE OVARITIS.

The treatment of acute ovaritis is often applicable to pelvic abscesses in the iliac fossa, with which it is confounded, so that the following observations apply to a large number of difficult cases.

It is necessary to bear in mind, that resolution may take place after the formation of pus in the ovary, even after fluctuation has become apparent, as in Dr. Martin Solon's case. Valleix has seen another instance of resolution of acute ovaritis in a woman sixty years old. "The two first days," says this eminent pathologist, "I found a tumour, having six or seven centimètres in diameter, in the right iliac fossa, and so placed as not to admit of any interval between it and the iliac bone. The tumour was so *immoveable*, that I considered it an instance of phlegmonous inflammation of the iliac fossa not yet arrived at suppuration; but a little later, the tumour became more distinctly limited to an ovoid form, *and left an elastic space* between it and the iliac bone. The following days the tumour diminished, so much so, that in ten or twelve days it had completely disappeared, without any evacuation."

Having to contend with an acute inflammation menacing extension to vital parts, we must reduce its intensity, and the fever by which it is accompanied, by general as well as by local measures.

Bleeding.—This is one of the most effectual measures to which we can resort. On the Continent, and particularly in France and Italy, it is the common practice to combat the high fever which accompanies the local symptoms by copious venesections. The veins of the arms are those chosen to relieve the circulating system, according to the old and not to be despised doctrine of derivation. This was also the English practice some thirty years back, and torrents of blood flowed at all our hospitals. Now, however, venesection is but seldom practised, even in cases of acute rheumatism, or of equally severe inflammation, and it is a question whether we do not err by this opposite extreme—whether we could not shorten the duration of many diseases by returning to the practice of moderate bleeding, in addition to our other therapeutical resources.

With respect to acute ovaritis, it is well to bear in mind that in 6 of our 26 cases wherein acute ovarian inflammation terminated by resolution, *active depletion* had been resorted to. From 10 to 12 ounces of blood should be taken from the arm, and, if necessary, this

should be repeated, particularly at a menstrual period, if there be signs of the menstrual molimen without the usual critical discharge. To prevent the further necessity of venesection, we follow the usual practice, and give doses of two or three grains of calomel, with or without a quarter of a grain of opium, every second or third hour.

Local Bloodletting.—Instead of 8 or 10 leeches to the seat of the disorder, it will be necessary to apply from 15 to 20, and, if urgent, to repeat their application over the tumour. The bleeding from the leech-bites should be promoted by a warm, thin linseed-meal poultice. We must not, however, suppose that by these means we can always check the subjacent inflammation, for, in one of Montault's cases, a spontaneous opening took place through the skin, notwithstanding two hundred leeches had been applied over the tumour at different times.

The combined influence of bleeding and calomel is shown in the following case given by Loënhardt:

Case 63.—Mrs. S., aged forty, of middling stature, delicate figure, and florid complexion, the mother of several children—the youngest of which is eight years old—having hitherto enjoyed good health, was attacked, March 12th, 1829, with abdominal pains when the catamenial period was just over, in consequence, as she supposed, of catching cold. These pains increased considerably, and compelled her to keep in bed. She complained of a continued throbbing in the right ovarian region, and a distressing desire to pass water, accompanied by scalding: the urine was red and clear. On closer examination the abdomen appeared nowhere enlarged or tender except in the above-mentioned spot, which was swollen, and pressure there considerably increased the pain. The vagina was hot but not painful, neither was the rectum, but upon examination with the finger through this passage, the ovary of the right side of the uterus was found swollen and painful. The patient was feverish and thirsty, flushed cheeks, suffused eyes, a white dry tongue, pain in head, pulse quick, but neither full nor hard. She was put on a strict antiphlogistic treatment, and recovered in the course of eight days. On the 17th April of the following year, an alarm of fire in the night was the cause of her catching another severe cold. She passed a sleepless night, had frequent rigors, with pain in the abdomen, and suppression of the catamenia took place. The next morning she complained of dull pain on the right side of the abdomen, in the same spot as formerly, much increased on pressure, but it appeared to be deeper seated this time, and the abdomen was not so swollen. She experienced a constant forcing to evacuate the bowels without effect, but she had no difficulty in passing water. The vagina felt hot and dry. Introduction of the finger into the rectum produced pain. The ovary was evidently in a state of inflammation, but this time it was more swollen and more painful. The constitutional symptoms were more marked, the skin was hot and dry, she had much thirst, the head was confused, the pulse 126, not particularly hard, the urine sparing and red. She was bled to 10 ounces; 12 leeches were applied to the abdomen, which was afterwards

fomented with a narcotic application, and a grain of calomel was administered every two hours.

19th.—Her general condition was improved, but the pain in the abdomen remained unabated, and there was more impulse to strain, by which only a small quantity of mucus passed. The bowels had not been moved, although she had taken 10 grains of calomel, and enemata had been instantly returned without effect; 20 more leeches were applied to the painful spot, and, besides the calomel powders, she took an oleaginous emulsion.

20th.—The bowels acted twice during the night, and the irritable state of the rectum somewhat diminished, but the abdominal pain was not much abated; the pulse continued quick, although neither full nor hard, the heat of surface was moderate, urine red and thick; 10 more leeches were applied. She was directed to apply a drachm of mercurial ointment every two hours, and to take a warm bath.

22nd. — The night was passed more quietly, the symptoms diminished, the same remedies were given at longer intervals, and the warm bath again ordered.

23rd.—After a restless night the local and general symptoms became aggravated; 12 ounces of blood were taken, in spite of her apparent debility. On tying up the arm she fainted. In order to modify the action of the bowels, which had been much increased by the calomel, a little extract of opium was added to the emulsion, and the mercurial frictions stopped.

This last bleeding produced a complete change, for the next morning the pain had nearly ceased, and the action of the mercury showed itself upon the gums and salivary glands, but her recovery was somewhat retarded from the nurse having, contrary to orders, used the mercurial friction the following night.

MERCURIAL INUNCTIONS.

We have advocated their use in sub-acute ovaritis, and they will be found equally useful in the treatment of acute ovaritis, if the quantity employed be increased in proportion to the intensity of the complaint. Plastering half an ounce of mercurial ointment on the abdomen of a patient suffering from idiopathic or puerperal ovaritis, reminds us of Dr. Meigs' expression relative to the employment of calomel in the same disease: "You are going to put two or ten grains of calomel on the mucous membrane of the stomach to cure sixteen feet square of red-hot serous tissue, which is like a prairie on fire." If any utility is to be derived from mercurial inunctions, they must be made according to the plan of Mr. Serres d'Uzes, who covered the whole anterior surface of the abdomen with a coat of strong mercurial ointment two lines thick; and without taking off this, a similar application was renewed every two hours, so as to consume two pounds of mercurial ointment in forty-eight hours. Mr. Serres has found this plan successful in many forms of abdominal inflammation, but thinks it useless to continue it if, after two days, no benefit has

been derived, and according to his statement salivation does not follow this practice. Lisfranc lauds this mode of treatment in acute inflammation of the joints. He has found it successful in metro-peritonitis, even when the malady was epidemic, and he cites the name of an obstetric practitioner of repute in Paris, who also found it useful in that disease. We know not whether the plan has been tried at home, but it seems to us that it should form a prominent part of the treatment of acute ovaritis.

PURGATIVES AND INJECTIONS.

These are less serviceable than in the treatment of the milder form of ovaritis, their remedial tendencies being counteracted by the pain they mechanically determine, and by the necessity of disturbing the patient. That the bowels should be relieved every second or third day is all that is requisite during the acute period of the complaint. Considering that cubebes and copaiba have often suddenly cured, at the same time, blennorrhagia and orchitis, it would be worth while trying the same remedies in blennorrhagic ovaritis, for at least no harm could be done.

SPONTANEOUS OPENING OF THE ABSCESS.

We have seen that the resolution of ovarian abscesses is of rare occurrence, and we have pointed out the roads by which the pus escapes, showing, at the same time, that the least dangerous mode of elimination of the pus is through the vagina. From the observation of this fact to an attempt to imitate the process by which Nature has often brought about a cure, there was but one step. Practitioners of former times were obliged to found their diagnosis of pelvic tumours on rational symptoms only, as they were not possessed of those improved modes of exploring the deep-seated abdominal viscera which we have carefully detailed; they therefore preferred to let these tumours take their own course, and open spontaneously, which, we must allow, was sometimes done with impunity, even after the prolonged retention of pus in the system. Thus, Lassus relates the case of a woman, who for several years had a hard, voluminous tumour in the abdomen. The abdominal pains became excessive, and the patient's death was supposed to be imminent, when she suddenly voided a great quantity of pus through the vagina. The pain vanished, the abdomen returned to its natural size, and the patient was soon restored to health—*Lassus, Path. Chir.*, t. i.—Marjolin describes a similar case—*Dict. de Méd.*, Art. Kyste.

The thickness of the pariete of the abscess may be such as long to delay its spontaneous opening. It may thus acquire a large size, and predispose the patient to peritonitis, by extension of the inflammation, as well as by the continued presence of a large quantity of pus in the pelvis; in such a case there is a greater chance of its perforating the peritoneum, and causing fatal termination. Even when the perforation takes place through the skin or a mucous membrane, it will seldom do so until too much mischief has occurred, by extensive inflammation in the adjoining organs and cellular tissue, for the

constitution to be benefited by the result; while, at the same time, hectic fever, and subsequently protracted suppuration and permanent fistula, reduce the patient to a state of marasmus. It often happens, and always, when the skin is opened, that the spontaneous bursting of the abscess is not effected in the most favourable situation for voiding the pus, and thus a vitiated fluid is allowed to remain in the *cul-de-sac*, causing inflammation of the surface of the cyst, and its subsequent perforation so as to find a freer vent for its secretions. Should the abscess communicate with the bladder or the intestines, the contents of these viscera may penetrate into the ovarian abscess, causing symptoms which are afterwards explained by the *post-mortem* examination. Thus, in two cases, where matter was found in ovarian tumours, death supervened upon diarrhœa, which had lasted a year, although the causes of its existence were not satisfactorily explained.

If, instead of leaving the opening of pelvic tumours to Nature, the surgeon, so soon as fluctuation becomes manifest, opens them with all due precaution at the place where they point, and whence, in general, the pus can easily flow, the patient is immediately relieved from the pain arising from the inflammatory distention of the cavity, and from many other dangers already enumerated. Loss of strength being thus prevented, the patient has a better chance of recovery; for it stands to reason, that the small incision thus made, has a greater tendency to heal than the rugged lips of a spontaneous and ulcerated opening. Chronic inflammation of the neck of the womb, of the vagina, the rectum, and the bladder, the results of the continual passage of pus on the mucous membranes of these parts, are also generally avoided by this artificial opening; no doubt from the tumour collapsing, its sides speedily adhere, and thus heal without fistula. By opening these tumours in that portion of their extent accessible to the surgeon, we have also the great advantage of being able to inject various liquids into their cavity, whether our object in so doing be to remove the fœtid secretion, or, to preclude the entrance of air, by keeping them full.

Bossu and Martin de Bordeaux have successfully opened circumscribed abscesses of the peritoneum so soon as fluctuation became evident, and Baudeloque looks upon the question as decided in favour of artificial opening of the tumour. Dr. Grisolle, in his paper on abscesses of the fossa iliaca—abscesses much resembling the tumours we are now considering—also decides in favour of an artificial opening. Velpeau, Mme. Boivin, and others, are of the same opinion, and Recamier, for many years, successfully adopted this plan of treating ovarian and iliac abscesses. In the majority of cases where it is not had recourse to, sudden death is caused by their opening into the peritoneum, or the drain made on the system by interminable fistula produces an equally fatal, though perhaps a less speedy result. While following the Paris hospital practice, we have often observed, those patients from whom the pus had been voided by the vagina or the rectum, leave the hospital uncured, after remaining five, six, or seven months there; and a year or two afterwards we have not unfrequently met these same individuals, still suffering from

discharges caused by the protracted suppuration of the broad ligaments. In illustration of the fatal consequences resulting from a procrastination of opening the tumour, we narrate the following case:

Case 64.—A woman, aged twenty-four, had for a few months been suffering from an affection of the abdomen, supposed by her medical attendant to be cancerous. She consulted M. Guillot, who, in an examination by the vagina, recognised a tumour protruding into that passage, in which he thought he detected fluctuation. So great, however, was the pressure of the tumour on the vagina, that but one finger could be made use of for the exploration, and this could not be introduced higher than the os uteri, and a silver sound could scarcely be passed between the mucous linings of the vagina. M. Guillot proposed the vaginal opening of the tumour, but the other medical attendant considered it cancerous, and looked upon the obscure fluctuation as that often presented by encephaloid growths. The vaginal puncture was therefore omitted; the tumour increased in size, and in a few days made its appearance outside the vulva. Fluctuation became evident, and the tumour was opened, and gave vent to a great quantity of pus. No intense inflammation ensued; the patient nevertheless died, weakened by the protracted and abundant suppuration of the tumour.

In this case the operation was performed when the local complaint had already undermined the health of the patient; but no doubt, if an experimental puncture had been made so soon as the tumour became prominent in the vagina, the diagnosis would have been correctly made, and the patient's life saved.

In the case of a young woman for whom Velpeau was consulted, fluctuation was perceptible in a pelvic tumour; he proposed its vaginal opening, to which the patient would not consent. An aperture, therefore, took place in the iliac region, permanent suppuration was established, and the patient died of marasmus.

When once it is decided that an opening is necessary, the question naturally arises—where the opening should be made? The most important point is to study the means which Nature seems disposed to adopt, so as to choose the spot where fluctuation is most superficial, and where there is the least chance of wounding the peritoneum, arterial vessels, or any important organ. The opening should also be made, as much as possible, with the view of affording every facility for the escape of the pus.

VAGINAL INCISION OF OVARIAN ABSCESSES.

As the vaginal opening of the abscess is the most desirable, we will first treat of this mode of operating, and will preface our observations by stating, that this way of treating pelvic abscesses was known to Paulus Ægineta, and was adopted by Callisen—*Systema Chirurgiæ Hodiernæ*, t. ii. Towards the end of the last century it was performed by Macarn, and since then by Pelletan, Dupuytren, Alphonse Leroy, Neumann, Lever, Merriman, Roux, Velpeau, Dubois, Nonat, Robert,

and Monod, but most frequently by Recamier. The arguments we have brought forward in its favour, the successful instances we have adduced, and the example of so many eminent practitioners, will no doubt recommend this operation to the profession, and diminish, if not preclude, the possibility of the patient being left to the uncertainties and dangers of a spontaneous opening of the tumour.

In the first place, to avoid dangerous accidents, it is necessary, before operating, to bear fully in mind the relations of the vagina, the rectum, the bladder, the mode of their connexion, and the disposition of the peritoneum in the pelvis. It is well known that the peritoneum covers a quarter, or sometimes even a third, of the posterior portion of the vagina, being deflected into what is called the recto-vaginal space.

This disposition of the serous membrane would often seem to forbid the opening of the vagina by an incision, or, indeed, by any other means; but when a tumour exists in the cellular tissue of the pelvis, it pushes up this covering. In fact, this occurs every day when the bladder is distended. The bladder then rises above the symphysis pubis, lifting up the peritoneum, which it drags with it; and thus allows of the possibility of the high operation for the stone, or of puncture above the pubis.

As a similar displacement of the peritoneum occurs whenever a tumour is situated behind the vagina, it is possible to perform an operation on all the posterior portion of this canal without penetrating into the peritoneal cavity. The instances are very rare, where we are not sure of the position of the peritoneum with regard to the tumour; for whenever this latter is very prominent, so as to seem to be one with the vagina, we may fairly infer that it is subperitoneal; or if it be intra-peritoneal, that adhesions exist between it and the serous lining of the recto-vaginal space. Assurance is made doubly sure, if, on percussing the tumour through the vagina, no sensation similar to that of *ballottement* is perceived; and if, on varying the posture of the patient, the relative positions of the vagina and the tumour remain the same.

Before performing the operation, it is advisable to ascertain the exact position of the uterine arteries, for Dr. Bourdon has sometimes, in cases of pelvic tumour, felt the pulsation of one or of several arteries in the neck of the uterus; and Huguier affirms that towards the union of the upper third with the remainder of its length, it is constantly encircled by an artery as big as a crow-quill.

To perform the operation, Recamier employed an instrument somewhat similar to a pharyngotomus, for it consists in a convex bistoury, the point and edge of which may be covered by a silver blade of the same shape, but larger. This silver shield slides on the back of the bistoury, and terminates at the handle, in a prolongation, by means of which the point and edge of the bistoury may be unmasked to any extent the operator may desire. The patient should be placed on her back, with the thighs separated and flexed, while an assistant presses the abdomen with his hands from above downwards. Recamier used to introduce the index of the left hand into the vagina,

and having determined upon the point for operating, he then slid the instrument upon the finger, which had not been withdrawn from the vagina. During this time the blade of the bistoury was protected by the silver sheath, but when he had penetrated to the proper depth, he unsheathed it, and plunged the extremity into the tumour, until he felt something give way, and saw the liquid to which the incision had given vent. This wound, in the shape of a button-hole, was made vertically, to avoid wounding the uterine arteries. The instrument was then again sheathed, and withdrawn with the same precaution, the finger giving all necessary information concerning the extent of the incision, and the thickness and resistance of the parietes of the tumour. If the incision were not found sufficiently extensive, then a probe-pointed bistoury was conducted into the vagina, with its flat side laid on the anterior aspect of the finger, when the incision was extended.

This instrument of Recamier is far from being indispensable; for an ordinary straight bistoury, conducted with due care, and of which a part is carefully protected, may be used. It is of importance not to plunge the bistoury too deeply into the tumour, for fear of transfixing it, and wounding some adjacent organ. When the incision has been made through the posterior portion of the vagina, it is prudent to introduce the finger into the rectum, so as to ascertain, before prolonging it, how far distant the inferior angle of the wound is from the intestine. When the tumour is found to be distended with a thick viscous matter, having no disposition to leave the cavity, it is necessary to inject a sufficient quantity of tepid water into the cyst, to soften and eject its contents. In a case of peri-uterine hematocèle, which Recamier took for a purulent tumour, he broke down, and detached with his finger the coagulated blood which adhered firmly to the internal surface of the cyst. In all instances the pressure on the abdomen is to be carefully continued by graduated compresses applied to the scrobiculus cordis, under the tight body-bandage, by which means the abdominal viscera are forced down. The following case will, without doubt, interest the profession:

Case 65.—A woman, aged thirty-one, entered the Hôtel Dieu, January 22nd, 1840. Her general health was good, and menstruation regular; but a year and a half previously she miscarried, but soon recovered. Three weeks after her entrance, menstruation appeared, having been delayed eight days beyond the usual time, and being accompanied by violent pains on the left side of the abdomen. The menstrual discharge was excessive, and lasted longer than usual.

Feb. 19th, the patient was feverish, and perceived a swelling on the left side of the hypogastrium, attended with lancinating pain. This tumour was hard, moveable, and seemed to be so divided as to present two portions, the one, inferior, deep-seated, and situated near the mesial plane; the other, superior, more superficial, and lateral. Vaginal and rectal examination confirmed these peculiarities, and permitted the detection of fluctuation in the inferior portion of the tumour. There was nothing abnormal in the neck of the uterus, but on each side of it was felt the pulsation of a large uterine

artery. There was difficulty in passing urine, constipation, pains in the loins, weight in the fundament, pains in the left thigh and groin, fever, and prostration of strength. The bath, poultices, and purgative enemata were ordered.

28th.—Irregular shiverings occurred, and on a vaginal examination Recamier found fluctuation behind the neck of the uterus. He made a vertical incision through the posterior wall of the vagina, but only blood came away; on the following days, however, sanguineous pus was discharged, and the patient felt relief.

March 6th, the fever returned, but without the shiverings; on the 10th, the patient vomited several times. She still complained of pain in the abdomen, though the wound was closed, and no matter could exude. 11th.—By a vaginal exploration, while an assistant pressed down the abdomen, Recamier felt a fluctuating tumour to the left of that previously opened. He made a second incision, when a great quantity of fœtid pus, mixed with blood, gushed forth. Bath, injections, poultices were continued. In the following days the quantity of pus voided by the wound, the fœtid smell, and the size of the tumour diminished. The patient's strength began to return, and she could take food; the injections were still continued. 24th.—The opening was completely healed, no traces of the tumour remained. The next day the patient left the hospital perfectly cured. This case is interesting for the following reasons:—1. The miscarriage had occurred a year and a half previously; and was the predisposing cause of the subsequent ovarian inflammation. 2. The case exhibits a great precision of diagnosis, since, by means of different examinations, two tumours were discovered connected together—the one, inferior, deep-seated, and approaching the mesial plane, being situated behind the uterus; while the other, or superior, was superficial and lateral, and had its seat in the broad ligament in the neighbourhood of the ovary. 3. Incisions were made into two distinct tumours. The first puncture was made in the central tumour, and did not extend sufficiently deep to reach the collection of matter; nevertheless, the pus soon made its way out at the spot where the road had partly been prepared for it. The urine was then passed freely, though constipation continued; this symptom being accounted for by the existence of the lateral tumour, which, descending behind the vagina, pressed on the rectum; for constipation ceased when the second incision was made, and a large quantity of pus was passed. 4. The patient was cured in a month and three days. If these tumours had been left to open spontaneously, how long would the disease have lasted, or would it have been cured at all?

Thus, by the artificial opening, the walls of a tumour have a greater tendency to collapse, and the tumour itself to retract, and there is less liability to the introduction of air into its cavity, which is generally followed by the decomposition and fœtidity of the pus. Besides the methodical compression, Recamier attached great importance to keeping the cyst full of water, and therefore recommends its injection two or three times a day. When performing this operation, it is necessary to take care to conduct the injection with very little force, so as not to bring into play the elasticity of the parietes of the cyst. Pillows

should also be placed under the nates of the patient, with the intention of keeping, if possible, the opening of the cyst above the level of its fundus. This position, and the compression, should be continued so long as the walls of the tumour are too thick or too dense to collapse. When they have acquired sufficient elasticity to follow the water on its retiring from them, the patient may resume her accustomed position in bed, but the injections should be continued so long as there remains a cavity. Besides other advantages, the repeated introduction of the canula of the syringe prevents the wound from closing before the cavity of the cyst is obliterated, and answers the purpose much better than the catheters we have seen placed in the wound with that intention by some operators, particularly when we consider the great difficulty of keeping these instruments in their place. If the opening, however, has been made with a trocar, the canula must be left in the wound, for should it be removed before the obliteration of the cavity, it would be difficult to replace it; and in trying to re-introduce it into the cyst it has sometimes penetrated the peritoneum. A fatal case of this kind happened at the Hôpital Cochin.

It is indispensable to push the water to the extremity of the syringe before beginning the injection, and to let it glide along the pulp of the finger previously introduced into the vagina, so as to secure its immediate entrance into the wound without injuring the patient. It is also of great importance to propel the piston of the syringe with great gentleness.

Sadler having to treat an abscess of the right ovary about the size of the fist, and finding that it had no tendency to open either by the vagina or rectum, pressed it down with the left hand, and with the right punctured it by means of a curved trocar. Several ounces of pus were voided, and matter continued to flow till the fifth day after the operation, when the wound healed. Abundant diuresis removed a concomitant ascitic effusion.

Chomel mentions, in his lectures, that two of his patients experienced every two or three months a swelling in the iliac region, and then passed a considerable quantity of pus by the vagina. One had been in this state for two years, the other for eight. In such cases it would be well to imitate Dr. Oldham, who, in two instances, radically cured the patient by cutting out a portion of the vagina so as to drain an ovarian abscess. But this should not be attempted until the abscess be well distended. It is considered necessary by some to paint the edge of the wound with nitrate of silver to prevent its healing too speedily.

RECTAL INCISION OF OVARIAN ABSCESSES.

We have already explained our reasons for disapproving of this plan of treatment, which we only employ in cases where it is found that the abscess is on the point of bursting into that canal, when it would be better to open it at once, instead of allowing any further disorganisation of the tissues of the rectum.

OPENING OF OVARIAN ABSCESSES THROUGH THE ABDOMINAL PARIETES.

If fluctuation be not perceived in the vagina or the rectum, but is found in the hypogastric region, then the aperture must be made in that part of the abdomen towards which the tumour points. It would, however, be highly imprudent to open the abscess without having effected an adhesion between the cyst and the abdominal walls, as we can never be sure that such has already taken place. Several plans may be adopted for this purpose, all borrowed from the treatment successfully employed in the cure of abscess of the liver.

Dr. Graves makes an incision of a portion only of the thickness of the abdominal parietes, and then applies linseed-meal poultices over the incision; and the pus almost always finds an exit where the walls of the tumours have been thus weakened. When an opening is once formed, it is important that the free issue of the matter be maintained. As this treatment has been very successful in abscesses of the liver, it might be equally so in those pelvic abscesses which point towards the surface.

Dr. Begin's mode of treating abscesses of the liver is similar to the preceding, inasmuch as he cuts down on the tumour until he reaches the peritoneum, but does not divide it. He then dresses the wound; and a few days after, when, as the result of inflammation, the parietal peritoneum becomes adherent to that portion of the membrane which covers the abscess, he punctures it, and thus gives issue to the pus. This plan of treatment might also be advantageously employed; but we have adopted that proposed by Recamier, and which is likewise adopted by M. Martin, of Montpellier.

Having decided in what part of the abdomen it is most desirable to effect an opening, and ascertained, by the uterine sound, that the hypertrophied womb does not constitute the most prominent part of the swelling, a certain quantity of potassa fusa cum calce, made into a paste with alcohol, is applied to the skin; and when the thickness of the parietes requires more than one application of the caustic, it is better to remove only the central portion of the eschar, leaving the circumferential portion to protect the cuticle from its action. When the seat of fluctuation is nearly reached by the caustic, and adhesions have evidently taken place, as shown by the impossibility of the abdominal parietes sliding over the tumour, an incision is then practised in the centre of the eschar. Injections of tepid water should be made into the abscess, to remove fœtid secretions, and to impede the ingress of air, by keeping the abscess full of fluid.

The following case, wherein Recamier employed potassa fusa, instead of Vienna paste, will give a fair idea of the treatment:

Case 66.—A woman, aged twenty, entered the Hôtel Dieu, February 1st, 1840. Five weeks before, she had been confined of her first child, and had ever since suffered from pain in the abdomen. She soon perceived that a tumour had formed in the right hypogastric region. The patient had shivering fits, fever, and vomiting, she was

pale, with eyes deeply sunken, and suffered from irregular shiverings during the day, and perspirations at night; the pulse was small and frequent, and there was pain on passing the fæces and urine. It was easy to feel through the abdominal walls a hard tumour, about the size of a large apple, in the right iliac region; and on a vaginal exploration, fluctuation was discovered behind the neck, and to the right of the body of the uterus. Recamier, not finding any arterial pulsation, made an incision, and a large quantity of pus was evacuated. Injections, baths, poultices. During the following days considerable improvement took place; still the pulse remained frequent, and there was pain on passing urine, and on the right side of the hypogastric region. The tumour, which had been opened by the vagina, was much reduced both as to size and the amount of its secretion, but there was considerable tension in the right iliac fossa. Feb. 26th.—A pulsating tumour, causing much pain, was felt in the groin. The pain was much augmented by the slightest movement of the right leg, and particularly by its extension. 27th.—Fluctuation became evident, and the vaginal opening of the tumour was closed. There was high fever, with abundant nightly perspirations. 29th.—Two fragments of caustic potash were applied on the prominent point of the tumour; on the following day the eschar was divided, and two other fragments of caustic potash were placed in the wound. March 2nd.—Recamier made an incision in the eschar, and gave issue to a large quantity of fœtid serous pus. This operation greatly relieved the patient, and caused the movements of the lower limbs to be no longer painful. In spite of diarrhœa, her health improved; sleep, appetite, and strength returned, the volume of the tumour decreased, and injections diminished the fœtidity of the pus. 25th.—The fistulous opening of the tumour was closed, the patient gained flesh, and on the 29th she left the hospital perfectly well. Since then her health has been uninterruptedly good.

It was reasonable to think that a vaginal incision in the lowest part of the tumour would suffice, but fluctuation appearing in another part of the body, another opening became necessary. This case, however, certainly tells in favour of the treatment, for, notwithstanding the weakness of the patient, and the severity of the complaint, she was completely cured in two months.

The following is a case of puerperal abscess in the left broad ligament; and we give it to show how effectually adhesions of the corresponding surfaces of the peritoneum are produced by potassa fusa, and also as an example of the fatal effects of want of caution in injecting the cyst.

Case 67.—A female, aged twenty-six, was confined, in March, 1841, at the Maternité. Her confinement was natural, but two days afterwards, and before the appearance of the milk fever, she was seized with diarrhœa, and violent pains in the hypogastric region. On the sixth day she complained of fever and headache, which were relieved by bleeding. She shortly after returned home, but on suffering from shiverings, sickness, and difficulty of passing urine, she entered the Hôtel Dieu on April 3rd. The hypogastric region

was found very painful, the uterus rising above the pelvis; and on a vaginal examination great pain was experienced when the finger pressed on the os uteri and the body of the uterus, which was still of the size of a turkey's egg. Pressure on the surrounding parts was also painful. The vagina was hot, and secreted a small quantity of bland mucus. A rectal examination enabled Recamier to ascertain the increased size of the womb, and the healthy state of the broad ligaments. Pulse 100, but not hard. Ten leeches; cupping on the hypogastric region; baths; poultices. April 7th.—The fever had abated, and, on examination, the uterus was found to have resumed its proper size, but in the left broad ligament was discovered a round, hard, and painful tumour, about the size of an apple. Poultices and mercurial ointment were applied to the corresponding part of the abdominal walls. Some days after, the patient had shivering fits, lancinating pains, and throbbings in the tumour, which became more and more apparent; and, on the 25th, fluctuation was manifest through the parietes of the abdomen. As the contents of the tumour did not seem likely to find a vent through the vagina, Recamier decided on giving them issue by an artificial opening through the skin, and a certain portion of Vienna paste was applied to the abdomen, where fluctuation was most palpable. The next day a second application was made in the same place, and on May 2nd the abdominal parietes could not be made to slide over the tumour as before, proving that adhesion had taken place. An incision was made at the bottom of the eschar, and a glassful and a half of thick pus was discharged; and the patient was told to keep on her left side. Some days after, the pus in the cyst became fœtid, and tepid water was daily injected into its cavity. On May 10th scarcely a spoonful of liquid had been injected, when the patient suddenly felt violent pains in the abdomen. On the same day the patient had shivering fits; she fainted twice, and had all the symptoms of acute peritonitis. After a few days peritonitis seemed to confine itself to the left side of the hypogastric region; but fever, with nocturnal perspirations, continued; diarrhœa succeeded; and death carried off the patient two months after she had entered the hospital.

Post-mortem Examination.—The intestines adhered together, and to the adjoining viscera, by false membranes. The peritoneum was slate-coloured, and the subjacent cellular tissue was injected. In the peritoneal cavity there was a great quantity of green sero-purulent fluid, in which floated fragments of false membranes. Among the intestinal folds there were several small collections of pus, circumscribed also by false membranes. One of these collections communicated with the thorax by a perforation of the diaphragm; while another, situated in the recto-vaginal *cul-de-sac*, opened into the rectum. The tumour, which had been opened, was seated in the upper portion of the left broad ligament. It was of the size of an apple, and contained a few spoonfuls of grey pus; its internal surface was also grey, and had the appearance of a mucous membrane. The following were its connexions:—its internal surface was applied to the left side of the uterus, and deviated con-

siderably from its usual position, by resting on the recto-vaginal purulent collection. Externally, the tumour was connected with the left iliac fossa, the Fallopian tube, and the left ovary, which was considerably drawn down, of a grey colour, and softened. The superior portion of the tumour was in connexion with the peritoneum and the false membranes which covered the investment; and its anterior portion corresponded with the left side of the hypogastric region, and with the serous membrane, being strongly adherent to it all round the eschar. These adhesions were carefully examined, and not the smallest aperture was found in them by which any liquid could have passed. The posterior portion of the tumour rested on the rectum, to which it partially adhered. It was in this portion of the abscess that the thin ulcerated edges of a perforation were discovered. The perforation was about a quarter of an inch in diameter, and through it the pus had passed from the abscess to the peritoneum.

This case shows the necessity of making an artificial opening of these tumours in the most dependent portion, for the perforation occurred after an operation had already given issue to the pus; and we believe that it is always safer to open the abscess through the vagina. So suddenly did the symptoms follow the injection of the cyst, it was natural to suppose that peritonitis was caused by the rupture of the adhesions surrounding the eschar; but the *post-mortem* examination showed that the perforation was the result of undue pressure of the fluid injected on the wall of an abscess weakened by inflammatory action. Without doubt, therefore, the passage of a small quantity of water into the cavity of the irritated peritoneum gave rise to that acute peritonitis which prematurely carried off the patient, and this leads us to recommend great gentleness to the surgeon who injects the cyst.

Should the abscess burst in the peritoneum, the consequences must be combated by large doses of opium, as Stokes and Chomel have recommended in intestinal perforations—a plan of treatment which Graves found successful in a case of abscess of the liver which burst in the peritoneum.

CHAPTER XXV.

PATHOLOGY AND TREATMENT OF SANGUINEOUS PELVIC TUMOURS.

SYN.—Sanguineous pelvic tumour.—Hematocèle peri-uterine.—French authors.—Clot in pelvis.—Dr. Ballard.

DEF.—*Cystic tumours formed by the effusion of blood in or out of the peritoneum which lines the pelvis.*

In detailing, in a previous edition, the terminations of acute inflammation of the Fallopian tubes, we related several cases by which it appeared that the rupture of these tubes had given rise to sanguineous pelvic tumours. So much light has, since then, been thrown on this disease, that we have thought it better to give it a separate consideration; but as the subject of sanguineous pelvic tumours is little understood in England, we think it useful to establish the nature of the disease, by cases wherein a *post-mortem* examination has been made.

CASE 68.—Maria C., aged twenty-seven, entered the hospital of St. Louis, January, 1850, her health was habitually good, and menstruation regular, until the last two years, when she had a child. A month previous to her entering the hospital, and seven days after the last menstruation, she suddenly felt acute pain in the hypogastric region. This was followed by a sanguineous uterine discharge, constipation, dysuria, vomiting, and fever. By a vaginal examination the neck of the womb was found inclined to the right, and pressed against the pubis, the anterior lip was almost in contact with it, the posterior was thin, and seemed to be the continuation of a tumour situated in the recto-vaginal *cul-de-sac*. This tumour was smooth, globular, immoveable, and about the size of a billiard ball.

Malgaigne, whose reputation as an excellent surgeon cannot suffer by one mistake, considered it a fibrous tumour of the posterior wall of the uterus, and determined to enucleate it. After dividing the neck of the womb, something gave way, and two pounds of coagulated blood, having the appearance of black currant jelly, were extracted. The patient died of repeated hemorrhage from the divided arteries of the neck of the womb.

At the *post-mortem* examination no uterine tumour was found, but a vast cavity, extending from the recto-vaginal space to the superior portion of the left sacro-iliac articulation. This cavity was lined by well organised fibrine, and full of blood-clots. On injecting the primitive iliac artery, and the ovaric arteries and veins, the liquid

flowed from the divided surfaces of the neck of the womb, but none from the cavity of the cyst. The ovaries were healthy, the peritoneum acutely inflamed. Although this case throws no light on the causes of sanguineous pelvic tumours, it illustrates their morbid anatomy.

In the following case, published by Dr. Bernutz—*Arch. Gén. de Méd.*, June, 1848—the tumour was smaller, though similar in many respects.

Case 69.—A woman, aged forty, menstruated regularly, was pregnant seven times, but twice only carried her child the full period. In her last confinement it was necessary to turn the child. Without any apparent cause, menstrual suppression took place, and the patient suffered much from abdominal pains. The following month there was a recurrence of the pelvic pains, without any discharge. Leeches to the fundament were ordered, with blisters to the ovarian region; and while the patient was in a warm bath, she passed a clot of blood, sufficiently well organised to be called by her a piece of skin. This was followed by a slight but continued flow, which afforded considerable relief. Tension and swelling existed in both ovarian regions, and when pressed upon, the pains were compared to those of the last stage of parturition. Micturition was painful, there was constipation, and tenesmus when the bowels acted. These symptoms had been somewhat subdued, when she was suddenly seized with intense pain, first felt in the lower part of the pelvis, but afterwards radiating to the whole of the abdomen, with continued vomiting; the pulse was small, and frequent. Notwithstanding the application of 90 leeches to the abdomen, the patient soon sank, and on a *post-mortem* examination traces of chronic peritonitis were found, such as a slate-coloured peritoneum and a melanotic tint of some of the intestines. The abdominal viscera were also in a state of recent agglutination, and when separated, the intervals between them contained a brownish-red sanious liquid. The walls of the uterus were three times their usual thickness, and its cavity contained about an ounce of blood. *The right ovarian tumour was about the size of a hen's egg, and of a brownish-red colour. When opened, its cavity was found to communicate with that of the uterus by a permeable oviduct, containing a red clot in its uterine extremity, and a mixture of pus and blood in the rest of its dilated extent.*

The tumour was formed by the enlargement of the ovarian extremity of the oviduct, the fringed border of which embraced the ovarium, and was so firmly agglutinated to it that the cyst was ruptured on attempting to separate the one from the other. The left tumour was about the size of a turkey's egg, covered with well-organised false membranes of a pale red tint. This tumour was likewise formed by the dilatation of the ovarian extremity of the oviduct, which was also permeable in its whole extent. The fimbriæ of the left oviduct, however, only composed a part of the walls of the cyst, and uniting with the false membranes adhered to the ovary and to part of the broad ligaments, thus forming the cyst. It was not possible to find in its walls an aperture through which the blood could have passed from it into the abdomen. In the pelvic cavity was found the sanious brick-

dust-coloured fluid previously alluded to, and on removing this a solid clot was found, three inches in diameter; beneath it was the consolidated fibrine which, from its colour, texture, and density, was more like cartilage than anything else. Although the whole peritoneal surface was carefully examined no ruptured blood-vessel was found to account for the presence of the blood.

The phenomena of this case may be thus summed up:

1. Retention of menstruation from uterine inflammation.

2. Repletion of the uterine cavity and Fallopian tubes.

3. Repeated distention at menstrual periods of the Fallopian calyx, which helped to form the tumour in the ovarian region, and rupture of the tumour. Passage of blood into the peritoneum causing chronic peritonitis.

4. Expulsion of a portion of the retained blood, and improvement of the patient's health.

5. The swollen and hypertrophied condition of the right ovary showed that at the menstrual periods the blood had flowed from it into the cyst and into the peritoneum. The absorption of its central substance will lead to the comprehension of the following case, which has been published by Dr. Piogey:

Case 70.—Eliza F., aged twenty-seven, a delicate woman, first menstruated at eighteen, married, but has been steril. She entered Necker Hospital on March 25th, 1848. Three months before, the menstrual flow became more abundant and painful, and as it did not return, pregnancy was admitted as the cause of sickness, of abdominal pain and swelling. A globular and voluminous tumour was felt to occupy the left side of the abdomen, from the pubis to the umbilical region. The tumour was hard but fluctuating; the finger, when introduced into the rectum, felt pressed between it and the sacrum. The tumour was opened externally by repeated applications of potassa fusa to the abdominal walls, but the patient died of peritonitis. On opening the body, the tumour was found within the fold of the right broad ligament. This covered a mass of grey semi-organised fibrine, in the centre of which was a chocolate-coloured fluid; and by a microscopical examination, the solid portion of the tumour appeared to consist of fibrine, the liquid being composed of detritus of fibrine and deformed blood corpuscules; the *right ovary* and *Fallopian tube had disappeared;* the left were healthy.

In the previous case, the right ovary had broken down in its central portion, and if the patient had lived the ovarian stroma would most likely have disappeared by degrees, and been totally absorbed, as in Dr. Piogey's patient. One case thus seems to explain the other. The next shows that a sanguineous pelvic tumour may be caused by ovarian hemorrhage.

Case 71.—A woman, aged twenty-nine, in whom the courses were regular, menstruated in February, 1851, but the flow only lasted two days, and was followed by continued hypogastric pains. Five weeks after, the flow again appeared, but very scantily, and only lasted two days. The hypogastric pains became worse, and were accompanied by constipation, and a difficulty of passing water. The next month the

menstrual flow returned, but merely as a show, in the midst of symptoms of acute peritonitis, and the patient entered the wards of Dr. Marotte, at the Hospital of Ste. Marguerite, in Paris. This gentleman detected a swelling, which seemed to consist of the womb enlarged to the size of the fist, and intimately connected with a larger tumour, about as large as a child's head at birth. Soon after the patient's admission to the hospital she passed in the stool about a pound of coagulated blood, and considerably more in the course of the following days. At the end of the month blood and pus came away by the vagina. Symptoms of purulent resorption appearing, Denonvillier was consulted. On introducing his finger into the vagina, he found a cavity behind the neck of the womb. This small cavity communicated with a larger behind the womb itself. An incision was made, so as to establish a free communication between both cavities, and to permit the injection of tepid water; the patient got worse, and died in four days. The hypogastric region presented evident proofs of peritonitis, and, on carefully removing the intestines, a recto-uterine cyst was discovered filling the pelvic cavity. With regard to the topography of the tumour—

1. The lower wall was formed by the recto-vaginal pouch, and perforated, so that the cyst communicated with the vagina.

2. The upper wall, by the layer of false membranes which united the superposed intestines.

3. The cyst rested on the rectum, perforated during the patient's lifetime.

4. The womb and the ovaries were in front of the cyst.

The womb was perfectly healthy, one of the Fallopian tubes was impermeable. The ovaries were swollen, and they contained several *small cysts opening into the sanguineous tumour*. "*One of the little cysts*," says Mr. Nélaton, "*still contained blood-clots*."

The morbid specimen was exhibited to the *Soc. de Chir.* of Paris, and Denonvillier, Lenoir, and Nélaton, considered this case to be one of ovarian hemorrhage. They admitted that the elimination of blood from the ovarian stroma having gone beyond its normal bounds, the blood had flowed into the recto-vaginal pouch, had become circumscribed by local peritonitis; and here we may observe, that in our first edition it was stated "that the effusion of blood from the ovarian tissue at the menstrual epochs, is much more frequently followed by local peritonitis than is generally admitted."

Obstruction of the menstrual flow may cause sanguineous pelvic tumours, as in the following case, to be found in Dr. Pauly's work on *Diseases of the Uterus*, in which case the retention of menstruation was the consequence of an operation, which gave unconfirmed hopes of being useful, and finally produced occlusion of the womb.

Case 72.—Mme. F. T. suffered much at first menstruation. She was married at fifteen, and soon became pregnant. After her confinement menstruation was irregular; she was long subject to a leucorrhœal discharge; menorrhagia also supervened. She sought medical advice, and the neck of the womb was found enlarged to

about the size of a pigeon's egg. Removal of the neck of the womb was performed in presence of Lisfranc; plugging was necessary, but there were no serious consequences. The wound healed with great rapidity, and forty days after the operation the patient menstruated, but it was impossible to find the orifice of the uterus. The patient, however, recovered her health, and for two years and a half menstruated regularly, though less abundantly. After that time the quantity of the menstrual fluid diminished considerably, and the pain increased. In the September of the fourth year after the operation, instead of the catamenia, came symptoms of peritonitis, with swelling of the right iliac region. These symptoms abated, under the influence of energetic antiphlogistic treatment, and the patient passed the months of November and December in tolerable health; but instead of the menstrual flow appearing every month, the pelvic symptoms became worse. The following January, the peritoneal symptoms increased; a swelling was distinctly felt in the right iliac region; it became more painful, and diarrhœa and fever carried her off in the following June.

The *post-mortem* examination was made in the presence of Drs. Carron du Villars, Duperlet, and Pauly.

The vaginal canal ended in a *cul-de-sac*, formed by the solid fibrous cicatrix. The uterine orifice was completely obliterated; the iliac fossa was filled by a tumour containing in its centre a substance resembling tuberculous matter, which is often observed in a sanguineous tumour of long standing, for no tubercles were found in the lungs or in any other organ. It is to be regretted that no sort of information is given respecting the uterus, the oviducts, or the ovaries. Notwithstanding the obliteration of the mouth of the uterus by the operation, for two years afterwards a menstrual flow, though in a diminished quantity, was regularly secreted. Its diminution was accompanied by dysmenorrhagic pains, and its suppression and effusion in the vicinity of the abdominal opening of the oviduct, by a painful swelling in the iliac region. At every recurrence of the menstrual period, an additional quantity of blood was extravasated, causing the aggravation of the local peritonitis.

Rupture of the Fallopian tubes, exemplified by the following cases, will also elucidate the question; one is recorded by Pr. Switzer:

Case 73.—Anne C. G., aged thirty-seven, robust and active from her childhood. She had nursed six children, and nothing abnormal took place at any of her confinements. Her last child was born two years previously, and since then she had menstruated regularly. Oct. 9th, 1844, Mr. Woldbye found her suffering from pains in the loins, extending down to the pubis. The left hypogastric region was very tender on pressure. The pulse was 90, the tongue foul, and the head ached; for fourteen days she had expected to menstruate; anti-spasmodics were fruitlessly administered; fomentations and leeches were applied, but without success. On the following day the lower part of the belly was swollen, and too tender to admit of pressure. She was restless, vomited, and the pulse rose to 130. The treatment consisted chiefly of bleeding, calomel, and ano-

dyne enemata. After she had taken twenty grains of calomel, the symptoms became milder, but she died October 20th.

On the following day the body was opened. The peritoneal covering of the womb and intestines was strongly injected with blood, and upon it were to be seen small black spots. The intestines were dark-coloured, and much distended. Their mucous surface was in many places thickened, and covered with ulcers. There was a large coagulum of extravasated blood in the left iliac region. It filled the pelvis, covered part of the descending colon, and embedded the uterus. The blood having been cleared away, the uterus was found to be of its average size. The ovary, Fallopian tube, and round ligament of the uterus on the right side were normal. The left half of the uterus, with the parts attached to it, were larger and more distended than those on the right side, and the ovary and Fallopian tube lay lower than on the right side. This ovary was less than its fellow. The round ligament was normal. The Fallopian tube bulged out at its middle to the size of a walnut. A careful search having been made for the origin of this hemorrhage, it was traced to *a gap in the left Fallopian tube.* A probe introduced at its fimbriated extremity passed into the coagulum, but it could not be passed up into the tube from the angle of the uterus. When the examination had proceeded thus far, the uterus was divided longitudinally, the whole of the mucous membrane and arbor vitæ were found to be unaltered. A layer of lymph-like substance, of about the thickness of the pleura, lined the cavity itself.

In his remarks the learned professor labours hard to prove that this was a case of tubal pregnancy; but the existence of a cavity in a sanguineous mass found in the oviduct, no more proves that it was a product of conception than do similar cavities, when found in polypi of the heart or arteries, prove them to be likewise the product of conception. Admitting, however, that the periodical disengagement of an ovum was partly the cause of this fatal termination, its principal explanation is to be found in the obliteration of the uterine extremity of the Fallopian tube, and the retention of the menstrual secretion; for although the blood found an outlet by the abdominal opening of the tube, its texture was so much softened by inflammation in one portion that it probably burst from over-distention. The uterine extremity of the left Fallopian tube was obliterated; the blood which passed from the distended Fallopian tube into the peritoneum must have come from the tube itself, thus showing how the obliteration of its uterine extremity, which fortunately is of rare occurrence, may cause peritonitis, by hindering the menstrual secretion of the Fallopian tube from finding its way to the womb. In Mr. Monk's case—*Lond. Med. Gaz.*, 1841—the rupture of the oviduct did not occur till eighteen months after the first appearance of pelvic distention from retained menstrual fluid, and the Fallopian tubes were sufficiently enlarged to admit the finger, as in Dr. Meigs' case.

The rupture of an iliac aneurism may cause a sanguineous pelvic

tumour, as in a case recorded in *Guy's Hospital Reports, New Series*, vol. vii.

Case 74.—A woman, aged thirty-three, feeling chilled, and while returning home in a hurry, felt something burst within her, and a few days after became a patient of Dr. Lever. Her skin was blanched, abdominal suffering great, she could pass neither fæces nor water, and the pelvis seemed blocked up with a mass of what felt like malignant disease. There were no symptoms of peritonitis, but the patient soon died.

On opening the body the pelvis was full of coagulated blood, which had come from a ruptured aneurism, situated at the division of the common iliac artery of the right side. The posterior wall of the vagina was perforated, a false passage had been made by attempting to pass the catheter into the bladder, but there were no signs of peritonitis or of any visceral lesion.

Having thus related various instances of sanguineous pelvic tumours, we are able to investigate their pathology. It appears that Ruysh records a case similar to the above, that another will be found in a Leipsic scientific publication for 1693, another in *Hufeland's Journal* for 1818. Although these tumours are almost unnoticed in classic works, they cannot be called uncommon, at least in France, for since attention was drawn to them by Recamier, Velpeau has related cases—*Mémoire sur les Cavités Closes*—and within the last two years Andral, Huguier, Latis, Dufraignes, Piogey, Monod, Robert, Vignès, and several others have seen cases. Denonvillier has met with two, and Nélaton with six cases. In addition to a case to be related, Dr. H. Bennet has met with others. We have likewise seen several in France and one in London, but on inquiring of more than one obstetric physician in extensive London hospital practice, we have been informed that they have never or seldom met with similar cases.

The existence of such a disease is supported by the evidence of too many living witnesses of eminence to be contested, and if sanguineous pelvic tumours have not been observed by practitioners at home, we think they must have been confounded with pelvic abscesses as occurred with Dr. Bell's eighth case—*Lond. Med. Gaz.*, vol. xxxvii.—or with chronic ovarian cysts, as in an instance which has come under our notice.

But it must not be supposed that these cases are always fatal; generally speaking they terminate favourably, even when they open into the rectum or the vagina. Many of them terminate by resolution, as in the following case from the practice of Nélaton—*Gaz. des Hôpitaux*, Dec., 1851:

Case 75.—A woman, aged thirty-six, pale and thin, enjoyed good health, except the disappearance of the menses for two months. Six weeks previous to her admission to the hospital the catamenia appeared; but on the fourth day of the flow they left off suddenly, and nausea and violent abdominal pains ensued. A medical practitioner called this metritis, and leeches and poultices were applied to the abdomen, and baths and purgatives were ordered. The intensity of the pains diminished, but constipation was obstinate, and micturition difficult. At

the next menstrual epoch there was no flow, but an increase of abdominal suffering. The bearing down sensations felt by the patient determined the practitioner to make a vaginal examination; a round tumour was detected, thought to be an abscess, and when Nélaton was consulted, he found a fluctuating tumour pressing the rectum against the sacrum, and the urethra against the pubis. The abdominal pains diminished, and were still further relieved by the menstrual flow coming on at the usual time, although it only lasted two days. No active treatment was had recourse to, menstruation returned at the regular time, the tumour gradually diminished, becoming harder as it became smaller, and when the patient left the hospital after remaining there three months, the tumour was reduced to a lump about the size of a small hen's egg, situated behind the posterior lip of the womb, which had resumed its usual position.

An unpublished case which came under the care of Dr. H. Bennet, when he was house-surgeon to Gendrin at La Pitié, in Paris, will show that a sanguineous pelvic cyst may terminate by passage of blood-clots by the rectum.

Case 76.—Josephine D., aged twenty-five years; menstruation was habitually very painful. Two months before entering the hospital, the flow was suppressed without visible cause soon after its appearance, and there was intense pain in the hypogastric region, with other symptoms of local peritonitis. After the application of leeches to the pudendum the menstrual flow again appeared, but suddenly ceased, and the pains became worse. A globular swelling was then distinctly felt above the pubis, and this central tumour was evidently connected with an ill circumscribed tumefaction in both iliac fossæ, and which descended deeply into the pelvis. There was no leucorrhœal discharge, and nothing abnormal could be detected in the womb. Venesection, leeches, baths, were had recourse to with benefit, but the tumour did not diminish until the appearance of diarrhœa. For twelve days the patient passed by the stools numerous clots of blood mixed with pus, and by degrees she recovered. The illness lasted three months, the patient had been a month in the hospital, and when she left nothing remained of the pelvic tumour but an indolent swelling, about the size of a walnut, in the right broad ligament. Before remarking on the foregoing cases we will relate another from our own practice.

Case 77.—In 1845 we were consulted by the relatives of Miss L., twenty-five years of age, with dark hair and eyes, and, until lately, of a healthy complexion. She first menstruated at thirteen, and the flow continued regular, but was attended with much pain. Two days previous to the last menstrual epoch she got wet through whilst out walking, the flow came on as usual, but it was scanty. When we saw the patient she was suffering from great pain over the hypogastric region, and exploration was impossible. There was slight fever. We ordered twelve leeches to the right iliac region, which seemed the most painful, large poultices, and repeated doses of castor oil. The patient progressed favourably, but before she was able to leave her bed, the time for the appearance of her courses returned, and instead

of the customary discharge, the patient became worse. We found her in great agony, referring her pains to the abdomen, which was much distended, but partly by intestinal meteorismus. She had vomited some green stuff, the pulse was wiry and at 110, ℥x of blood were taken from the arm, twelve leeches were applied to the hypogastric region, and followed by fomentations and enemata. In a few days the patient recovered from this attack of peritonitis, the abdomen became less painful, and through the abdominal parietes a globular tumour could be felt occupying a central position in the pelvis, dipping deeply into its cavity, giving the patient the appearance of being about five months pregnant. The vagina was so forcibly pressed against the pelvis that it was difficult to introduce the finger, and thus was explained the difficulty of passing water. The womb was high up, its neck was firm as in the unimpregnated state. On introducing the finger into the rectum it was found flattened, and jammed into the concavity of the sacrum. This explained the obstinate constipation, which had lasted for the last few days. The tumour contained liquid, for on placing one hand upon it in the hypogastric region, and the index of the other hand in the vagina, fluctuation could be felt. It was, therefore, an encysted tumour in the pelvis, and in the recto-vaginal space. The sudden subsidence of inflammatory symptoms proved that peritonitis had only been local, and that this large tumour could not be purulent, we therefore thought it a sanguineous cyst, and similar to some we had seen in the private practice of Recamier. We plunged a long trocar into it through the posterior wall of the vagina, and an inch below the insertion of the neck of the womb. Two pints of dark syrupy blood were passed through the trocar, which was left in the wound. The patient felt instant relief. Dark blood continued to ooze out during the following days, and the canula was withdrawn. At the next period the menstrual flow was scanty, and the patient gradually recovered, and lost her pallid hue.

It has been doubtless remarked that these cases have many points in common, that most of them originated in the suppression of the menstrual flow, that local peritonitis ensued, then a pelvic tumour, which disappeared by the evacuation of sanguinoid fluid, which was found when a *post-mortem* examination was made.

Causes.—With regard to the predisposing causes of the extra peritoneal sanguineous tumours, we may notice the varicose development of the sub-peritoneal veins, as in a fatal case seen by Marjolin, subsequent to repeated pregnancies or miscarriages. Violent efforts, menstruation, and miscarriages, seem to have been the determining causes, to which we may add the rupture of a pelvic aneurism; in Piogey's case, acute ovarian disease, and hemorrhage at the menstrual period into the cellular tissue surrounding the ovaries; and with respect to the causes of *intra-peritoneal* sanguineous pelvic tumours, the obstruction of the menstrual flow, the rupture of Fallopian tubes may cause the complaint; and Denonvillier's fatal case shows that it may be caused by ovarian hemorrhage occurring during the process of ovulation.

This is a point of pathology which cannot be considered as settled,

although it received the assent of a learned society in a neighbouring capital; we shall therefore briefly examine the grounds on which it rests. Pouchet, and many other physiologists, have shown that, during the process of ovulation, blood is eliminated from the vesicle and the surrounding tissues. Pouchet has sometimes found the ovarian stroma so softened in the vicinity of the vesicle as to be torn on the slightest touch. The capillary vessels were much enlarged, or ruptured; and in four instances a blood clot protruded from the lips of the rent vesicle. These observations were made chiefly on sows, but the following case will show that the same appearance may be met with in woman; and in alluding to this case, Dr. Verney, of Lyons —*Gaz. de Hôpitaux*, July 8, 1852—aptly remarks, "that it might be well placed in a chapter on ovarian hemorrhage as an accident of menstruation."

CASE 78.—September 2nd, 1849, Mme. —— entered the Hôtel Dieu of Lyons. She was thirty-two years of age, first menstruated at twelve, and continued regular, both before and after the birth of her only child. While menstruating fifteen months ago, she was injured by a blow, and much frightened; the catamenia stopped, the patient was treated for metritis, and has ever since always suffered more or less acutely from abdominal pains, and a sanguineous discharge. The womb, on examination, was found hypertrophied, and anteverted. No surgical treatment or injections were resorted to, but the constant sanguineous discharge was checked by general measures. There was, however, a profuse sanguineous flow at the successive menstrual periods, which occurred from the 20th to the 25th of July and of August. Flooding occurred on the 23rd of September. On the 25th, acute peritonitis supervened, and the patient died on the 27th.

On opening the body, the usual appearances of acute peritonitis were found. The womb was chronically inflamed, and its cavity lined by a well-formed decidual membrane, but there was no ulceration, erosion, or fissure, to explain the constant loss of blood. The right ovary contained two small abscesses, the left was much hypertrophied, very vascular, and a blood-clot, the size of a horse-bean, formed hernia between the lips of the ruptured capsule of the ovary. Thus the consequence of the sudden suppression of the catamenia not having been carefully attended to, fifteen months' illness ensued, during which menstruation continued irregular, and the abdominal sufferings were kept up by ovarian inflammation, evidenced by the two abscesses in one ovary, and the vascularity and hypertrophy of the other. Then came the slight hemorrhage from the rent ovary and general peritonitis, the recent date of which was indicated as much by the appearance of the blood-clot as by the characteristic symptoms. This case is another instance of the interdependence of ovaritis and uterine hypertrophy. The treatment cannot be commended. No bleeding from the arm with a view of turning in another direction the blood current, flowing towards the pelvic organs for the last eighteen months, no perception of the indication to bleed from the arm after the second flooding in August, which in all probability would have

prevented the ovarian hemorrhage, and the fatal peritonitis which occurred at the following menstrual epoch.

It must be remembered that the disease occurs in females, and during the persistence of the menstrual function, and that in almost all cases it was preceded and accompanied by the same kind of menstrual disturbances, that most of the women thus affected have been subject to dysmenorrhœa, that the flow has been absent, less abundant, or sometimes very profuse, or that it dribbles on from one epoch to another—phenomena which it seems reasonable to interpret by their dependence on a similar, although on a less amount of the morbid conditions revealed by a *post-mortem* examination in the cases of Denonvillier, Vernay, and Piogey, while from Malgagne's fatal instance it is clear that some of the causes of this singular affection still remain undiscovered.

Symptoms.—These menstrual irregularities are accompanied by hypogastric pains, which often continue between the menstrual epochs, by constipation, and difficulty of passing water, or by a frequent desire to do so. In the mean time the patient becomes deadly pale, as from profuse hemorrhage. Fever ensues, with symptoms of local peritonitis, and the disease may be called " inflammation of the bowels, or metritis." But after a few days these acute symptoms subside, and when a digital examination is made by the vagina, the finger may meet with a swelling in the recto-vaginal pouch. It is difficult to pass the finger up the two superior thirds of this canal, which is more or less forcibly pressed against the pubis, and thus renders micturition difficult. When attained, the neck of the womb is found normal, its posterior lip may be effaced, and the uterus may be deviated. While the vagina is thus pressed against the pubis, the rectum is pushed against the concavity of the sacrum, which often renders a rectal examination difficult, and constipation obstinate. By abdominal pressure, a round tumour, of variable dimensions, is felt in the pelvis, or rising from it, and on pressing it the hand feels fluctuation when the finger of the other hand gives a shock to its vaginal portion. Fluctuation becomes less and less perceptible as the patient improves, for then the tumour diminishes, and its contents become more fibrinous. Fluctuation may be sometimes felt by the double touch.

Diagnosis.—In addition to the symptoms already given, fixity is another character of these tumours. They are fastened down to the peritoneum by false membranes under the intestinal mass, and are not moveable like uterine fibrous tumours. Besides, *these* are of long growth, and peritonitis does not form a prominent part of their history ; still, on account of the manner in which both peri-uterine sanguineous tumours and uterine fibrous tumours interfere with the rectum and urethra, they may be confounded. The absence of expansive movements of the tumour synchronous with the heart's impulse, will show that it is not an aneurism. In iliac abscess, the tumour is smaller, more lateral, fluctuation is more distinct, the corresponding lower limb is painful, œdematous, and the disease does not originate in, or relapses do not occur at, the menstrual epochs.

Sanguineous pelvic tumours will be distinguished from ovarian,

by the chronic march of the latter, which are not accompanied by the same amount of catamenial disturbance. Should, however, a similarity of local signs render the diagnosis difficult, an exploratory puncture will decide the point, as ovarian cysts very seldom contain the treacle-looking fluid, in which the elements of the blood can be detected by a microscopical examination.

An attack of local peritonitis leads us to believe that the cyst is *intra-peritoneal*. In some cases, the vagina, on a speculum examination, has been found ecchymosed; it is reasonable to suppose that this would rather characterise the *extra-peritoneal* variety.

With respect to the frequency of the two varieties of sanguineous tumours, exemplified by the *post-mortem* appearances of the cases, and which, with previous observers, we call *extra-peritoneal* and *intra-peritoneal*, it would be premature to decide. Nélaton, who has seen most of these cases, thinks that intra-peritoneal sanguineous tumours are most frequent, and although this cannot be proved from *post-mortem* evidence, it may be inferred from the frequency of such tumours being accompanied at one period of their growth by intense symptoms of acute local peritonitis, which does not occur to the same extent in extra-peritoneal sanguineous tumours, and did not, for instance, take place in Dr. Lever's case.

Treatment.—This is very similar to that recommended for ovarian abscesses, and we think, with M. Robert, that it is better to open sanguineous pelvic tumours by the trocar:

1. Because it presents a better chance of avoiding wounding the arteries.

2. Because it permits the *gradual* evacuation of the blood; the canula being left in the tumour—a point of importance if the tumour be one of long standing, for its walls will have then become solid from fibrinous deposits, as exemplified in the first case related in this work. The solid texture of the walls of the cyst prevents their collapse on the withdrawal of fluid, and facilitates the ingress of air.

3. Because it allows the possibility of making injections.

When the sanguineous tumour has lasted long, and when the blood is deposited in solid fibrous concretions on which the absorbing powers of the living membrane of the tumour can have little effect, or when the cyst gives issue to fœtid contents, it must be widely opened per vaginam. In making the incision it should be remembered that serious consequences have followed the wounding of arteries in the neck of the womb. After injecting the tumour it is well to introduce the finger so as to break down and to extract any fibrinous concretions, if any exist.

With regard to the prevention of sanguineous pelvic tumours, in the cases detailed, and according to the testimony of those who have seen similar cases, all the patients suffered more or less from dysmenorrhœa; or, in other words, the occurrence of pelvic tumours is one of the penalties of allowing the menstrual function to be too painfully performed. How often is it said of a case, "We did not investigate this or that symptom, because the patient was habitually dysmenorrhœic or hysterical." Should it not be the reverse?

BIBLIOGRAPHICAL INDEX.

> "Nescire quod antequam natus esses factum sit, id semper esse puer."—Cicero.

The value of any scientific work is greatly enhanced by the addition of a list of the principal works to which the Author has been indebted. This acquaints his readers with the school and age, the doctrines of which have influenced the writer; it enables those who study as well as read, to refer to sources, and test the author's veracity and judgment; while, to subsequent labourers in the same field, such a list of references is like a map to travellers in an unknown country; and now that the Press teems every year with medical works, the importance of Medical Bibliography has greatly increased.

In preparing this Second Edition, we have been struck with the inaccuracy of the references given in medical works. Writing from memory, and not from statistical data, we believe that a large number of the references given by French authors are incorrect, and that the same inexactitude prevails, though to a less extent, amongst English authors.

The way to prevent this evil would be, for authors never to transcribe a reference without having ascertained its correctness by consulting the original. Those who successively recast the data of medical science, so as to interpret them according to a more correct appreciation of the laws which govern them, seek their authorities from three sources; viz.:

1. The works of our predecessors on the same, or on similar subjects; these generally afford the greatest amount of information, and if few are included in the following list of contributions to ovarian pathology, it is because the physiology of the ovaries having only been understood within the last few years, it would be useless to

refer readers to works on diseases of women, deservedly popular on other grounds, but altogether incomplete, not only as regards sub-acute ovaritis, but also the acute variety of ovarian inflammation, whether idiopathic or puerperal.

2. The second source of Medical Bibliography is the periodical literature of this and of other countries. It has been seen how much we are indebted to this source for facts recorded during the last ten years, and which have enabled us to give a solid basis to some of the most recondite views of medical science.

3. The third source of Medical Bibliography is the thesis, or inaugural dissertation, written and defended by every one who, in other countries, pretend to the degree of M.D., or to high medical offices, which are given to the most worthy, "au concours."

The importance of this branch of literature is somewhat overlooked by English medical authors. In the great Continental medical schools the candidate for the doctoral cap generally takes for the subject of his thesis some of the striking cases he has met with in hospital practice, or the latest discovery; and frequently the facts and theories of a celebrated "Capo di scuola" are only to be found in the thesis of their favourite pupils. It was so with Stahl, and has been the case in our time with Recamier. Thus many facts are buried in dissertations which, although printed, have not been made available to all by being brought into the market.

When the medical institutions of this country are re-organised, it would be well if the writing and publicly defending a thesis were made the last step to the obtaining of the highest honours in medicine, for many of our most valued works have had no other origin. This branch of medical literature is almost entirely foreign; for although in the London and Scotch Universities a thesis must be written to obtain the title of M.D., we are not aware of their being collected, and thus made useful to the profession.

The collections of thesis' of Strasburg, of Montpellier, and of Paris, Edinburgh, Glasgow, &c., are mines of useful materials, which we recommend to fellow-labourers, whatever may be the object of their medical investigations, and we regret that want of time has only permitted us to glean in so fruitful a field. These collections should certainly form part of all extensive medical libraries, and we regret that they should be wanting in most of those in the metropolis.

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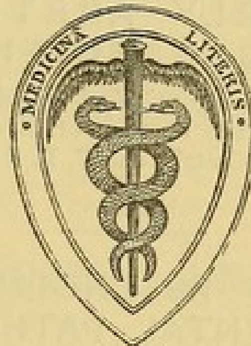

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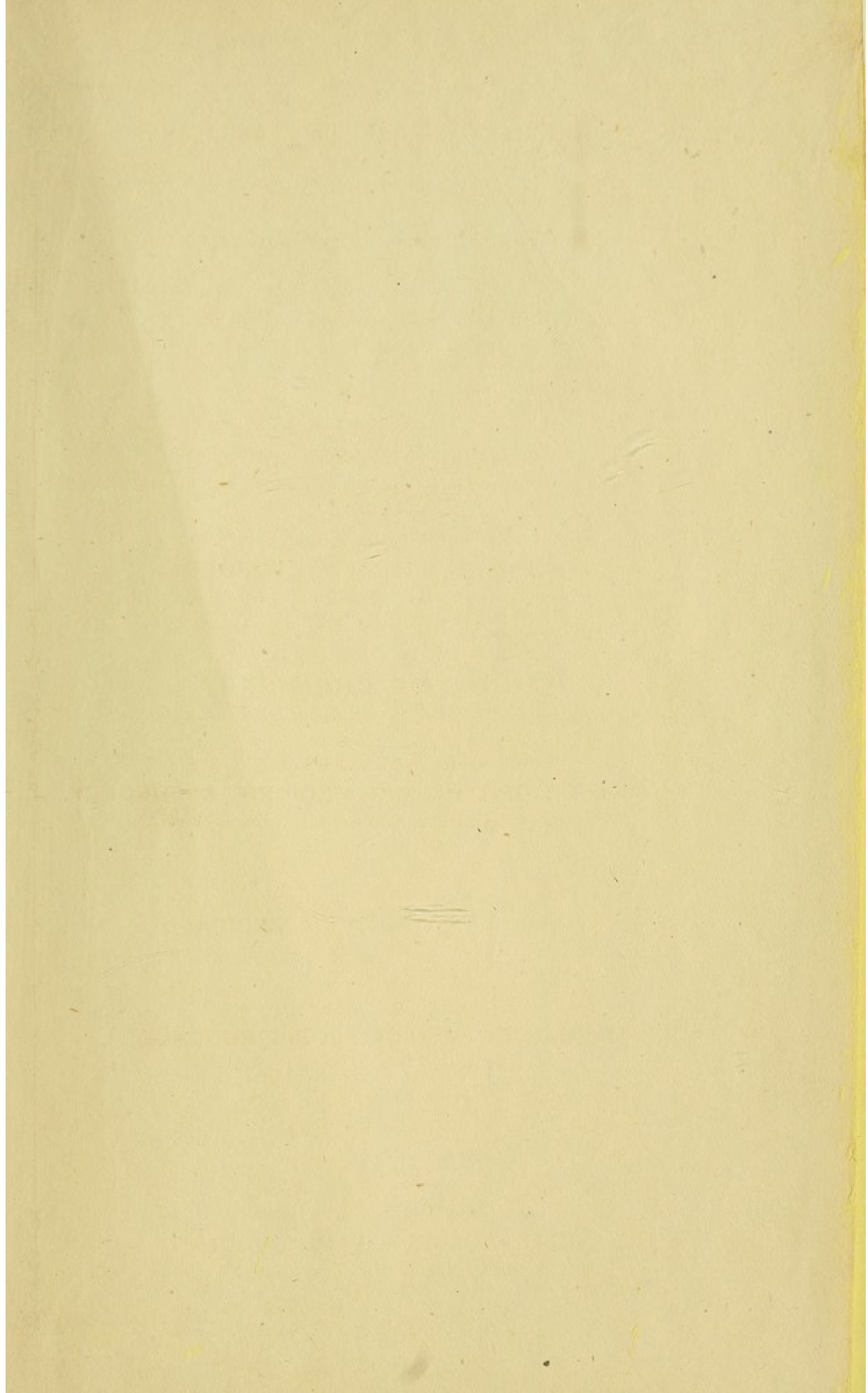

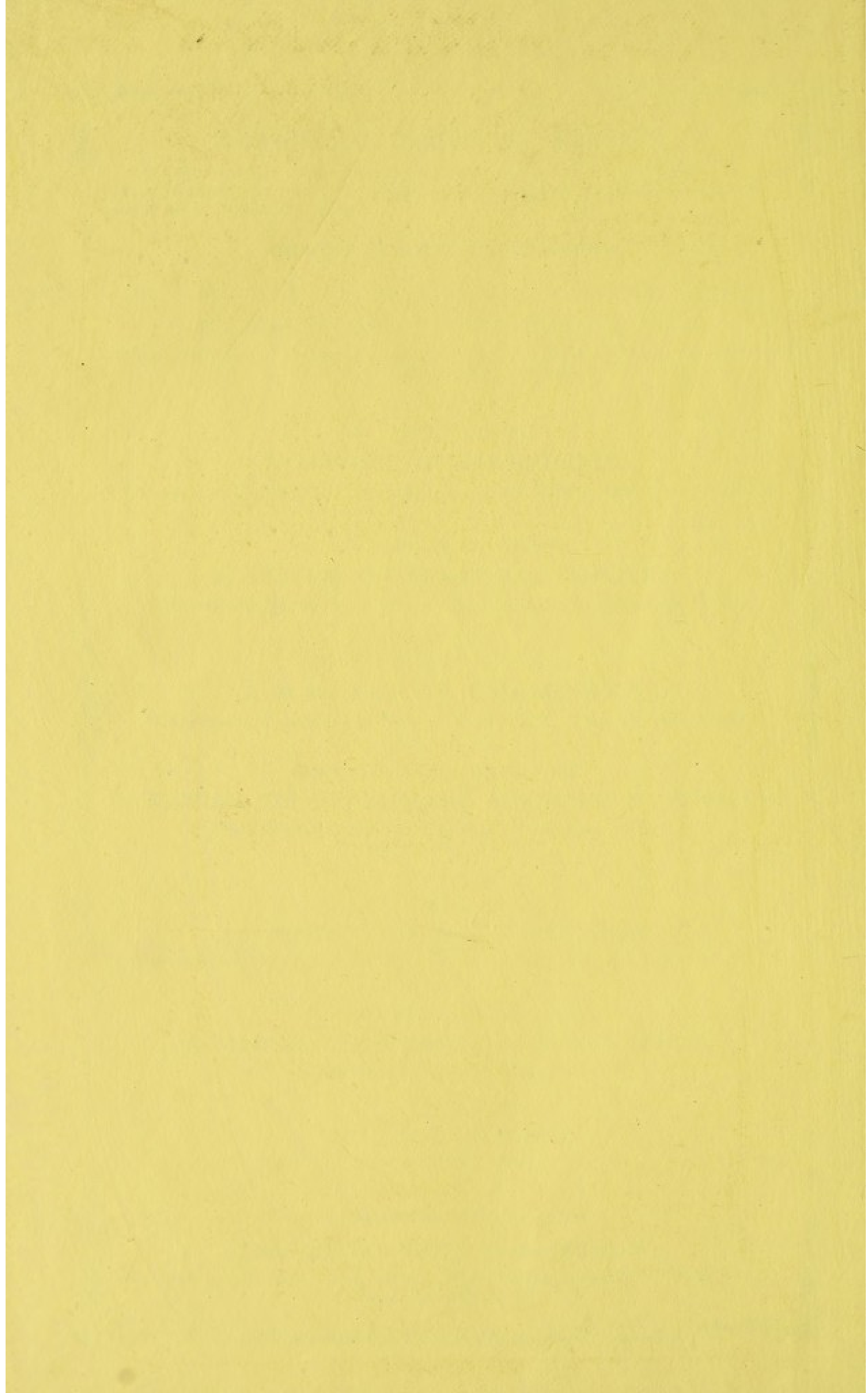

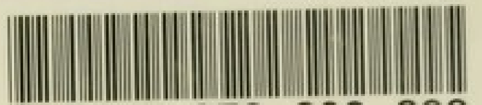
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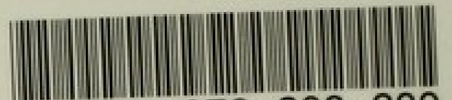
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