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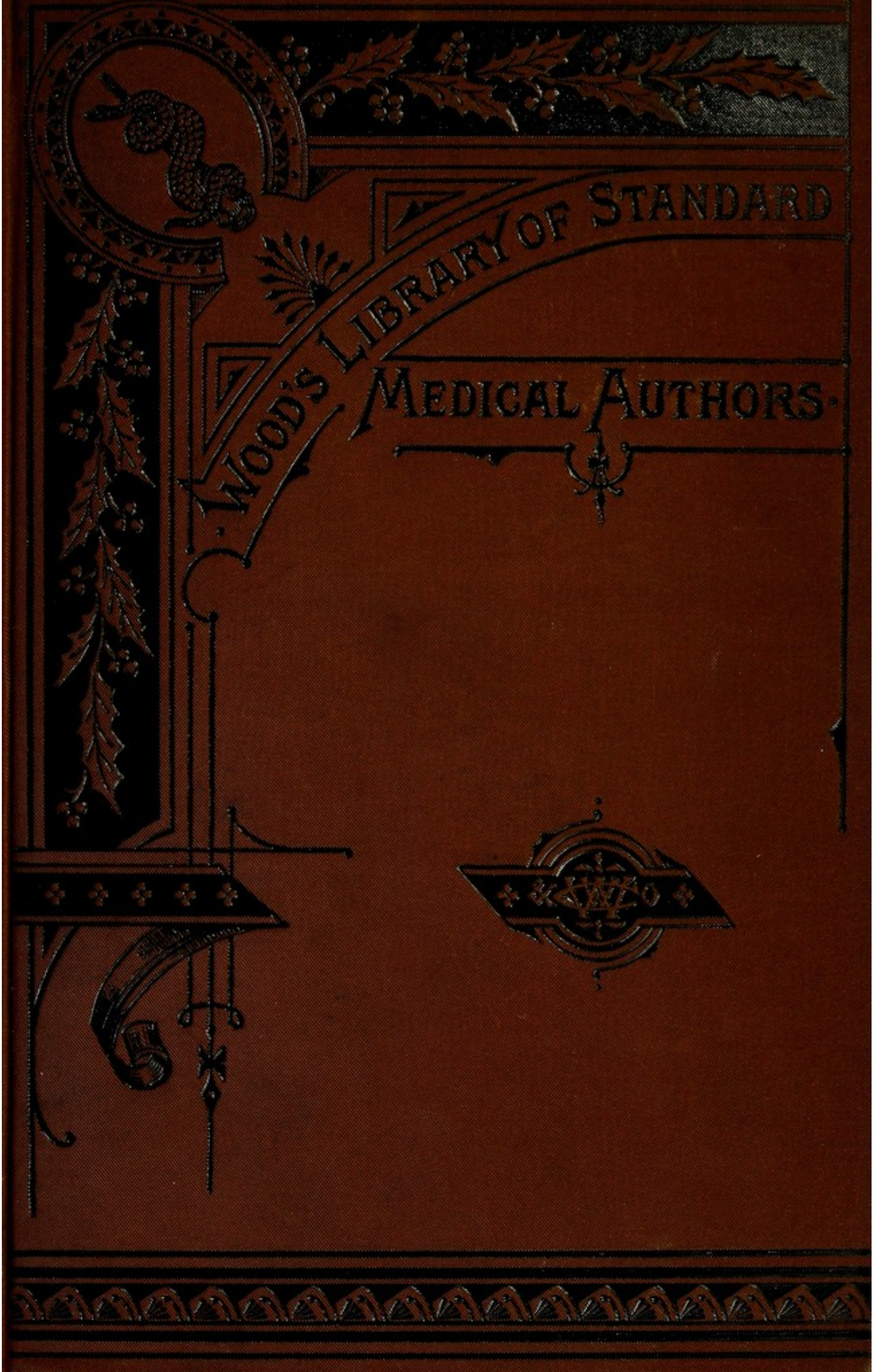
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A HANDBOOK

OF

UTERINE THERAPEUTICS

AND OF

DISEASES OF WOMEN

BY

EDWARD JOHN TILT, M.D.,

PAST PRESIDENT OF THE OBSTETRICAL SOCIETY OF LONDON; KNIGHT OF THE CROWN OF ITALY;
FELLOW AND CORRESPONDING MEMBER OF MANY MEDICAL SOCIETIES, BRITISH AND FOREIGN.

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PREFACE.

JUDGING by the number of cases that have come under my observation in which medical men have failed to recognize unmistakable uterine disease, while attending for many years to its more or less complicated reflex symptoms, I am led to infer that of the various departments of medicine, Gynecology is the least known, although there are several English and French works in which it has been well taught from various points of view. I therefore deem it useful to publish a fourth edition of a work which was brought out many years ago to diffuse a better knowledge of the diseases of women, and which was thought worth translating into German and Italian. So much has been done since the issue of the last edition, that I have had to rewrite and to considerably enlarge the book, but the original plan has been adhered to, as it is so useful for the busy practitioner to find embodied in successive chapters the relations of each special medication to the whole range of diseases of women.

Many questions of general interest are discussed in the introduction, so here I shall only remark that three therapeutical teachings are now striving for mastery over the medical mind. One trusts entirely to medicine, and strongly deprecates the treating of diseases of women by surgical measures. Another puts little or no trust in medicines, and represents the knife as the sure and safe mode of curing most diseases of women; while a third considers uterine orthopedy as the key-stone of uterine therapeutics. In all I have published during the last thirty years, it has been my earnest desire to combat these exaggerations, by determining the proper scope and the relative value of drugs, of the knife, and of pessaries in the treatment of disease,

and the guiding principles of the present work may be summed up in the following propositions. Firstly, the paramount importance of female hygiene for the relief, cure, and prevention of diseases of women. Secondly, the constitutional origin of many diseases of women, as well as the impossibility of curing them and of preventing relapses, unless the treatment comprehends such measures as are known to favorably modify constitutional taints. Thirdly, the possibility of curing most diseases of women without surgery, by the better application of old familiar remedies and sound hygiene. Fourthly, the utter impossibility of curing aggravated forms of the most common uterine affections, unless surgery be combined with medicine and hygiene.

It is a great satisfaction for me to believe that these principles of practice will meet the approbation of many medical men at home and abroad, for it is the high privilege of those who write in English to address the profession of other English-speaking countries besides their own.

E. J. T.

27 Seymour Street,
Portman Square, London,
April 17, 1878.

TABLE OF CONTENTS.

INTRODUCTION.

PAGE

Difficulties attending the study of diseases of women, ... 1
Women as medical practitioners, ... 2
Medical theories in gynecology, ... 3
The reign of the knife, ... 4
Gynecology in England, ... 5
How to study gynecology, ... 6
How to succeed in practice, ... 6
Interrogation of patients, ... 11
Examination of women, ... 12
Therapeutical hints, ... 14

CHAPTER I.

MODES OF EXAMINATION AND SURGICAL INSTRUMENTS.

Extra-uterine examination, ... 16
Vaginal examination, ... 16
Rectal examination, ... 18
Double touch, ... 19
Perpendicular examination, ... 19
Genu-pectoral examination, ... 19
Ocular examination, ... 20
Surgical instruments, ... 23
Intra-uterine modes of examination, ... 25
Uterine sound, and its dangers, ... 25
Wax bougies, ... 29
Exploration of the inner womb, ... 30

CHAPTER II.

UTERINE SURGERY.

Time for operating, ... 31
Anæsthesia, ... 22
Lymphangitis, ... 33
Peritonitis, ... 34

PAGE
Cervical dilatation, ... 34
Extensive dilatation, ... 38
Instantaneous dilatation, ... 40
Hysterotomy, ... 41
Intra-uterine injections, ... 43
Solid substances in the womb, ... 45
Intra-uterine swabbing, ... 45

CHAPTER III.

UTERINE DIETETICS AND HOME-TREATMENT.

The nursing of women, ... 46
Rest, ... 47
Exercise, ... 48
Railway travelling, ... 49
Diet, ... 50
Stimulants, ... 51
Sleep, ... 52
External applications, ... 52
Vaginal injections, ... 54
Enemata, ... 58
Suppositories, ... 59
Baths, ... 60

CHAPTER IV.

TONIC MEDICATION.

Strength and debility, ... 63
Collapse in chronic diseases, ... 66
Tonic medicines, ... 67
Hydrotherapeutics, ... 70
Change and travelling, ... 75
Seaside, ... 76
Mineral waters, ... 77
Electricity, ... 78
Marriage, ... 79

CHAPTER V.

SEDATIVE MEDICATION.

Nature of woman, ... 81
Hysteria, ... 81
Catalepsy, ... 86
Epilepsy and insanity, ... 87
Pseudo-narcotism, ... 88
Spontaneous orgasm, ... 88
Masturbation, ... 90
Cerebral indications of sedatives, ... 91
Ganglionic indications, ... 93

PAGE
Ovario-uterine indications, ... 94
Administration of sedatives, ... 96
Sedative drugs, ... 98
Cold, ... 107
Mesmerism, ... 107
Shock, ... 108

CHAPTER VI.

ANTIPHLOGISTIC MEDICATION.

Inflammation theory, ... 109
Bloodletting, ... 110
Leeches, ... 117
Scarification, ... 125
Antiphlogistic drugs, ... 126
Counter-irritants, ... 128
Electricity, ... 130

CHAPTER VII.

CAUSTIC MEDICATION.

Theory of caustic action, ... 131
Catheretics or mild caustics, ... 134
Nitrate of silver in uterine surgery, ... 137
Value of strong caustics, ... 144
Acid nitrate of mercury, ... 145
Fuming nitric acid, ... 146
Potassa fusa c. calce, ... 148
Chloride of zinc, ... 162
Actual cautery, ... 162
Electric cautery, ... 164

CHAPTER VIII.

EMMENAGOGUE MEDICATION.

Generous living, ... 169
Tonics, ... 169
Antiphlogistics, ... 171
Sedatives, ... 171
Uterine surgery, ... 172
Caloric, ... 172
Exercise, ... 172
Cutaneous stimulants, ... 173
Intestinal stimulants, ... 173
Nerve stimulants, ... 174
Ovario-uterine stimulants, ... 174
Emmenagogue drugs, ... 175

CHAPTER IX.

HÆMOSTATIC MEDICATION.

PAGE

Metrorrhagia, ... 178
Catamenial fever, ... 182
Climacteric flooding, ... 183
Vaginal flooding, ... 184
Cervical flooding, ... 184
Intra-uterine flooding, ... 184
Flooding from polypi, ... 185
Flooding from fibroids, ... 185
Flooding from cancer, ... 185
Flooding from the gravid womb, ... 185
Post-partum flooding, ... 186
Medicinal hæmostatics, ... 187
Bleeding, ... 187
Cold, ... 187
Heat, ... 188
Hæmostatic drugs, ... 188
Surgical hæmostatics, ... 193
Plugging the vagina, ... 193
Surgical styptics, ... 193
Ovariotomy, ... 194

CHAPTER X.

SPECIFIC MEDIFICATION.

Constitutional tendencies, ... 195
Uterine herpetism, ... 196
Rheumatism, ... 198
Gout, ... 199
Scofula, ... 200
Syphilis, ... 201
Cancer, ... 204

CHAPTER XI.

TREATMENT OF UTERINE MISPLACEMENT.

History of uterine orthopedy, ... 210
Causes of uterine misplacement, ... 213
Symptoms, ... 218
General treatment, ... 222
Bandages, ... 225
Prolapsus and procidentia, ... 226
Uterine flexions, ... 233
Uterine versions, ... 235

CHAPTER XII.

TREATMENT OF UTERINE COMPLICATIONS.

PAGE

Pudendal pruritus, ... 237
Follicular inflammation, ... 238
Eczema genitale, ... 239
Vegetations, ... 240
Vulvo-vaginal gland disease, ... 240
Vaginitis, ... 240
Vaginal contraction and relaxation, ... 241
Cervical elongation, ... 242
Fibroid degenerescence of the womb, ... 243
Uterine polypi, ... 243
Uterine fibroids, ... 244
Ovaritis and ovariotomy, ... 246
Pelvi-peritonitis, ... 249
Mammary diseases, ... 249
Irritable tumor of the urethra, ... 250
Inflammation of the urethra, ... 251
Irritable bladder, ... 252
Cystitis, ... 254
Dyspepsia, ... 257
Nausea and vomiting, ... 260
Enteritis and intestinal irritability, ... 267
Irritability of the rectum, ... 269
Hemorrhoids, ... 269
Inflammation of the rectum, ... 270
Semi-paralysis of the rectum, ... 271
Rectocele, ... 271
Spinal curvature, ... 272
Consumption, ... 272

CHAPTER XII.

TREATMENT OF STERILITY.

Causes of sterility, ... 274
Statistics of causes, ... 280
Absence of clitoris, ... 281
Unruptured hymen, ... 281
Labial adhesion, ... 281
Vaginal obliteration, ... 281
Vaginismus, ... 281
Undersized womb, ... 282
Cervical elongation, ... 283
Uterine displacements, ... 283
Deformed os uteri, ... 283
Cervical stricture, ... 284
Polypi and fibroids, ... 286

PAGE
Metritis. 286
Syphilis, ... 286
Salpingitis, ... 287
Ovaritis, ... 287
Peritonitis, ... 287

CHAPTER XIV.

PREVENTION OF DISEASES OF WOMEN.

Means of prevention, ... 289
A judicious system of education, ... 289
Careful management of menstruation, ... 290
Marriage, and prudence in married life, ... 291
Management of pregnancy and parturition, ... 293
Defective uterine involution, ... 296

INVESTIGANDA, ... 305

FORMULARY, ... 305

INDEX, ... 323

A HANDBOOK

OF

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AND OF

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INTRODUCTION.

To the student in medicine, there are few subjects which present greater difficulties than the study of the diseases peculiar to women, particularly in England. The diseases are common enough in the out-patient departments of any of the larger hospitals, but the special hospitals for diseases of women are small. In our great hospitals few beds are given to the obstetric physicians, and clinical instruction in diseases of women, like all other clinical instruction in England, is scarce and incomplete when compared with its daily delivery in continental hospitals. The result is that the student starts in practice with the most meagre knowledge of that great class of diseases which he must daily encounter if he has any practice at all. A wrong diagnosis is the result, treatment worse than useless is adopted; the patient continuing to suffer, either finds better advice elsewhere, or her real condition is undetected, and she remains for the rest of her life a helpless incurable, seldom free from pain, and worn out in body and mind. A glance at what gynecologists have done, at the present state of gynecology, at the conflicting tendencies of leading men, and at the impediments that lie in the student's path, will not be out of place. The youthfulness of gynecology is the first thing to observe, for it may be said to date from 1816, when Recamier insisted on the necessity of studying diseases of women as much as possible by ocular demonstration, like all other diseases. This taking of gynecology out of the shadowy regions of conjecture, had no effect on English ob-

stetric practice, and there is no mention of the surgical treatment of the most common diseases of women in Sir C. Mansfield Clarke's work published in 1821. It was the custom then, in the absence of fever, to treat uterine symptoms by port wine, tonics, a strengthening plaster to the back, rest on the sofa. In case of discharges, oak-bark or alum injections were given through a pewter or a glass syringe, or the patient was told to pass up the vagina a sponge soaked in a strong astringent solution. The treatment was the same, whether the patient suffered from vaginitis or cervical inflammation, from erosion or ulceration, from hard hypertrophy or soft hypertrophy, with or without extensive ulceration. The pathology of the best works was on a par with their therapeutics, for the diseases I have just mentioned were jumbled together under the name of Leucorrhœa, which now occupies but a small space in our best text-books, and does not head a chapter in the present work. The too-abundant secretion of unchanged vaginal mucus that occurs in some women, and particularly in those of a lymphatic constitution, is a circumstance of slight importance, and if the vaginal discharge be muco-purulent or pus, these altered secretions depend on inflammation of the womb or on vaginitis.

In England, gynecology may be said to have begun with the publication of Dr. Henry Bennet's first edition, in 1845. This work opened the eyes of the most intelligent men of the profession all over the kingdom, but, to the amazement of foreign pathologists, so late as 1850, the leading men in town got up the largest meeting ever held at the Royal Medical and Chirurgical Society to discourage ocular examination for the diagnosis and the treatment of uterine diseases, Sir Charles Locock alone protesting against such an absurdity. Nevertheless, independent observers, availing themselves of accurate modes of examination, and working in separate fields of observation, have founded a school of British gynecology second to none.

One reason why it is so difficult for young practitioners to understand diseases of women, is that one sex alone is qualified by the power of *continuous* work, and by the nature of his mental capacity, to investigate what the other sex has alone to suffer. That freedom of investigation and of explanation which has led to the accurate knowledge of the diseases of the lungs and of the heart, fails us when the functions of the generative organs of women become deranged. Modesty, the safeguard of society, raises such a barrier between the patient and the practitioner, that she long conceals her sufferings, and when at last modesty bends to the duty of self-preservation, she naturally prefers the elder practitioner, and thus deprives the younger of the average opportunities of studying her diseases. If women were able to compete with men in the practice of medicine, the greater freedom of intercourse between the female doctor and her patient would have the advantage of leading to the earlier

discovery of diseases of women, and to their earlier treatment. On the other hand, the predominance of emotion over reason, the monthly upset of health, the crippling of physical power by pregnancy, parturition, and lactation, and the strange effects of these necessary states of womanhood on a woman's mental and emotional faculties, will not allow many women to go through the same course of medical studies as we do, and to make an effectual use of their knowledge; while any large number of imperfectly educated medical women would add considerably to the bills of mortality. As a motive power, ambition in women is not to be compared to the healthy promptings of sexual instincts which must lead women to marry, and then the education of children and the interminable cares of a family will take away from most women the desire of adding our pursuits and responsibilities to their own.

With regard to the tendency of gynecological practice since 1816, it was chiefly medical up to 1848, when Simpson's influence began to be felt in a surgical direction, which culminated in Dr. Marion Sims' notes on uterine diseases, and is still in the ascendant. Taking first into consideration the medical theories that have been brought forward, some, like Dr. Bennet and myself, have considered inflammation as the great cause of pathological mischief, while others have politely bowed it out of their explanation of disease, one man saying that, unless cancerous or scrofulous, he has never seen an ulcer of the womb; and another, that he has seen it so frequently that it can have no pathological value whatever; one authority stating that uterine displacements are only troublesome when complicated by congestion and inflammation; and another, that displacements are the chief causes of congestion and of all other diseases of women. Some representing the body of the womb as bearing every interference with impunity, and others looking upon it as a *noli me tangere*. Some maintaining that slitting up the womb is an operation seldom required, and others, that it is very useful in many complaints, and a justifiable operation when none other can be suggested. As this is to be my last work, I am glad its teaching is in perfect concordance with what I taught in the first book I published in 1850. The doctrine accepted by Dr. Bennet from the French school was, that the cervix was the "fons et origo" of the most common uterine diseases, whereas, in my work on ovarian inflammation and diseases of menstruation, I claimed for the ovaries a pathological influence over the womb, analogous to their recognized physiological influence over the same organ, and I have elsewhere [1] summarized that work in the following propositions:

First.—That the recognized frequency of inflammatory lesions in the ovaries and in the tissues that surround them has a much greater practical import than had been hitherto admitted.

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[1] Progress of Pelvic Pathology. Transactions of the Obstetrical Society, vol. xvi.

Second.—That of all the inflammatory lesions of the ovary, those involving the destruction of the whole organ are very rare, while the most numerous, and therefore the most important, may be ascribed to a disease that may either be called subacute or chronic ovaritis.

Third.—That, as a rule, pelvic diseases of women radiate from morbid ovulation.

Fourth.—That morbid ovulation is the most frequent cause of ovaritis.

Fifth.—That pelvi-peritonitis is commonly caused by ovaritis.

Sixth.—That blood is frequently poured out from the ovary and from the oviduct into the pelvic cavity.

Seventh.—That subacute ovaritis not unfrequently causes and prolongs metritis.

Eighth.—The subacute ovaritis often entails considerable and varied disturbance of menstruation.

Ninth.—That some chronic ovarian tumors may be considered to be aberrations from the normal structure of Graafian cells.

It will be seen in the paper to which I refer, that most of these propositions have been amply confirmed by Aran, Bernutz, Sirédey, Gaillard, Negrier, Charcot, and Clairou.

These propositions have been accepted with slight modification by Dr. Gaillard Thomas, and the practical importance of subacute ovaritis has been admitted by Dr. Mathews Duncan,[1] and by Dr. George Kidd.[2]

While physicians have thus considerably varied in their interpretations of diseases of women, many eminent gynecologists have lost faith in medicine, teaching that most diseases of women are best cured by the knife, and that those who attend women ought to be called surgeon-accoucheurs.

How uterine surgery has grown since 1816, when Recamier thought ulcers of the womb might be cured by some simple salve spread on lint, and applied through a speculum. Uterine surgery soon took to leeching, and to scarifying the womb, and to caustic treatment; then Simpson set men to impale the womb on a fixed stem, and to deeply cut through the cervix to cure sterility. The mischief done by Simpson, and by the routine practice of his pupils, was limited to women in want of children, but Dr. Marion Sims pretends that bilateral cutting of the cervix, down to its vaginal attachments, not only cures sterility, but dysmenorrhœa, uterine displacements, and chronic inflammation of the womb. Huguier had taught us to amputate the cervix when it had become much too long, but, says Dr. Marion Sims: "If women want children, we must amputate the cervix when it projects more than half an inch into the vagina." It

[1] Address to the Obstetrical Section, Edinburgh Meeting. British Medical Journal, August, 1876.

[2] Address to the Obstetrical Section, London Meeting. British Medical Journal, August, 1875.

is really difficult what most to admire in Dr. Marion Sims' "Notes," the author's surgical ingenuity or his profound ignorance of pathology. That work has nevertheless struck the key-note of modern practice, and it still inspires many of our younger men with the belief, that as Dr. MacDougall was after all right about ovariotomy, so Dr. M. Sims is right in placing the knife above all other modes of treating uterine affections. "Primum non nocere" was all very well for olden time, now the motto seems to be "Primum operare." Sometimes in consultation with a junior, when I have objected to slitting the cervix, a pessary has been proposed, and if I could not see its utility, I have been imploringly asked, "What then are we to do?" as if uterine therapeutics consisted in nothing else but cutting or supporting the womb.

In England, the womb is still under the reign of the knife, and it seems to me the same in America; for Dr. Peaslee's strong protest against Dr. Marion Sims' operation, is rather against the depth to which he cuts, than against the expediency of the operation, or its too frequent performance, and to Dr. M. Sims' 500 cases, Dr. Peaslee opposes his 500 cases, in which his purpose was only to cut through the mucous membrane lining the cervix.

The worst of it is, that we have no convenient means of stamping out dangerous gynecological tendencies, as they have in France. When, many years ago, it became known in Paris, that in the hands of Valleix the intra-uterine stem pessary had caused the death of several women, the propriety of its use was brought before the French Academy of Medicine. In that eminently representative body, obstetricians like Paul Dubois had their say, but the question was principally discussed and decided by what we call *pure physicians and surgeons*, and it was they who put an extinguisher on the use of intra-uterine pessaries in French practice. It was well known to the profession, some years ago, that a talented surgeon was acting upon the very extraordinary notion, that the clitoris caused most of the nervous diseases of women. Our leading men could only shrug their shoulders and say to us: "Settle it among yourselves." We expelled the man from the Obstetrical Society, and although it was most righteously done, on purely public grounds, yet, as the grounds of conviction could not be published, and the sentence was not given by a public body representing the *whole* profession, it is still generally believed abroad, and more particularly in America, that this man was a victim of professional envy. If instead of considering gynecology as a specialty, an offshoot of midwifery, it was looked upon here, as on the Continent, as a branch of medicine that no well-educated medical man could afford to ignore, then here, as abroad, hospital men would treat diseases of women instead of sending them to obstetric physicians, and thus the knowledge of diseases of women would become perfected and be disseminated—as it has been in Paris, for instance, by such men as Aran, Huguier, Bernutz,

Richet, Sirédey, and others, who have nothing to do with midwifery. If our leading men had a moderate knowledge of diseases of women, they would seize the salient symptoms of uterine disease in the midst of other symptoms, and they would be less liable to damage their reputation, by hitting at a symptom when there is a disease to treat. Nothing would contribute more to the advance of all that relates to our branch of the profession than a good acquaintance with its pathology by our leading men. Standing on neutral ground, as umpires between us, they would exert a healthy control over extreme views, and put an early extinguisher on crotchets that menace to become too offensive.

For the last twenty years there has been a Medical Council, and its twenty-four members have been frequently changed, but not one man has ever sat at the Board who understood what relates to the obstetric branch of medicine, or who was taking an active interest in it, either as a teacher of midwifery or as a practitioner in diseases of women. If our leading men were well acquainted with diseases of women, the Medical Council would see that the too limited time now allotted for their study to medical students should be extended, and it would have insisted on the midwifery of the lower orders of our countrywomen being put on a respectable footing, instead of allowing it to remain a national disgrace, notwithstanding the repeated and urgent appeals made to it and to the Government by the Obstetrical Society of London.

Leaving this unsatisfactory state of things to be righted at last by the slow influence of public opinion, I resume the more becoming task of giving hints to students and to young practitioners, condemned by the undeniably deficient medical arrangements of this country to grope their way to a knowledge of diseases of women, even by such light as they can gather from the precepts of volunteer teaching. After making the best of his opportunities at home, any young man who really wants to understand diseases of women before beginning to treat them on settling down to practice, should spend a year in Vienna or in Paris, which affords such large opportunities for studying the diseases of women—opportunities so generously placed at the disposition of all; or better still, he should become dresser to some of the eminent physicians who particularly study uterine pathology, like Dr. Bernutz, or to those who do duty at the "Hôpital de l'Ourcine."

When a certain amount of clinical knowledge of diseases of women has been gained, it will be time enough to see how they have been interpreted by different writers, and I am glad to think that the best and most practical works on diseases of women have been written in the English language. It is so natural that I should entertain a strong conviction in favor of my own works, that I am afraid I shall not be altogether trusted, when I say that the best thing a beginner can do is to first study the physiology and diseases of menstruation in the third

edition of my "Uterine and Ovarian Inflammation." I claim to have there shown that diseases of women spring out of morbid menstruation, and that the study of its physiology and pathology is the way to unravel the complications of diseases of women.

On settling down to practice, the young practitioner will find how different it is to watch disease in an hospital and to assume the responsibility of a case; and he will feel the difference between medical science and medical art, by the difficulty of applying science for the good of his fellow-creatures. He will see how difficult it is to obtain a full knowledge of the circumstances of a case, for, instead of making it clear to him, the patient will often ingeniously evade his questions; or, without meaning to deceive, she may say what is not true, so that he will be frequently led wrong. This difficulty often increases in proportion to the degree of refinement of his patient; indeed, information having important bearings on the case often comes out only after many interviews. He will find that some are "*malades tant mieux*," taking an unreasonably sanguine view of their complaints, while others consider every symptom so despondingly, that they fully deserve to be termed "*malades tant pis.*" He will find that, until forced to remain in bed, many young women will never own they are ill, partly from bashfulness and partly from a fear of being bothered and made to adopt precautions, while those who have passed forty are often prone to exaggerate occasional indispositions, being led to do so from overrating the dangers that accompany the change of life. Different patients give us quite an opposite character, because they make us, to a certain extent, different from our usual selves. The cold, suspicious manner of some, so paralyzes one, that it requires a strong mental effort to plan their treatment; while the open and confiding manner of others, magnifies the power of curing them. So much for the patient; as for the doctor and his chances of success, he may have many good qualities, but unless he combine firmness with gentleness he will not get on. If rough, he will frighten his patient; if weak-minded, she will despise him. He should be married, or many will deny him the right to know anything about women, and he must allow himself no eccentricities of dress or manner; for, in the estimation of women, no amount of genius would excuse the eccentricities of an Abernethy. His behavior to his patients should be quiet and expressive of sympathy, which will not be less acceptable from being tinged with seriousness, and unless he be kind, he will be unable to bear with their caprices, despondencies, and mental infirmities, during the course of chronic disease. Melancholy looks make a patient feel worse; a cheerful face is a good tonic; but one must laugh little *with* patients, and not at all *at* them, for however ridiculous their fancies may be, they must be reasoned, not laughed out of them. He should not only be quiet in manner but also in voice, which should not be loud and boisterous. He should be cool

and collected, even when he has only ten minutes to give a patient, for a hurried speech and manner would flurry her, making her forget what she most wished to ask, and leaving her dissatisfied with the visit. Extreme neatness and cleanliness in all minor operations, and in the dressing of local complaints, can only be attained by practice. It is of the utmost importance, however, to strive to attain this neatness—for patients, however rich, will not pardon large stains being made on their towels or personal linen, and are apt to consider them as proving want of knowledge as well as of dexterity and practice. It will be obvious that, if there be the slightest suspicion of an ulcer being syphilitic, the speculum should be very carefully washed with a solution of permanganate of potash or of carbolic acid. Few know the importance of a first visit—how women, suffering from uterine complaints, have thought it over, what consultations have been held about it with friends and relations, and how many months or years of suffering it has taken to bring them to seek this first interview, which will decide whether the patient can have confidence in the doctor. How is confidence to be inspired? An eminent consulting surgeon, who has made a large fortune, thinks that a solemn oracular manner, and monosyllabic answers, makes most impression on his patients. I believe that a minute and logical investigation of the facts of the case is the safest plan, and that the best way of convincing a patient that one is master of the case, is to take the trouble of explaining it, so that she may leave the consulting-room convinced that her complaint has been understood by one anxious to cure her—a frame of mind eminently calculated to give efficacy to treatment.

Without discretion there is no possibility of success for a lady's doctor, as he learns and is told so much. He must not only keep as a sacred trust what has been confided to him, but he must be able to appear not to see what stares him in the face. For instance, if an unmarried woman says she has only profuse menorrhagia, it is better not to dispute the point, even when he has identified the umbilical cord. It is useless to the patient and damaging to one's self to exact a painful confession, when without it the case can be well treated.

Another secret of inspiring confidence is to be hopeful. It is a consolation attached to an arduous profession, that we can conscientiously pass our lives in raising the hopes of sickening despondency. It makes amends for the fatigues, the perils, the ingratitudes that must be encountered, to be able so often, by a word, to dispel fear and restore a family to happiness. With rare exceptions, of which cancer is a prominent example, those who treat diseases of women may deal largely in hope, and our duty then is not well done toward a patient, if we do not persuade her that her cure is certain, though delayed. One great advantage of experience is, that it teaches us hope. In those early days of practice when it made me blush to receive a guinea, if I met with cases where the

best treatment produced at first little or no good, I lost courage, and I infected the patient with my own despondency; but now that I have repeatedly seen such patients recover, if their faith can be kept up so as to make them persevere with more or less active treatment for a considerable time, one is justified in instilling hope, which so powerfully helps every mode of cure. The hope that is held out will, of course, be proportionate to the nature of the disease and its duration, or the practitioner's reputation will be seriously damaged. Should inflammation of the womb, for instance, occur after the change of life, it would be wrong to promise a speedy cure, for the repair of diseased tissue then proceeds at a slower rate than usual. When extensive ulceration of the cervix occurs during pregnancy, a cure should not be promised till after childbirth, and the patient should be warned that the disease makes her liable to miscarry; otherwise a miscarriage will be attributed to any treatment that may have been instituted to keep the disease in check. If a case has lasted for many years under very unfavorable circumstances, perhaps long undetected, and then inadequately treated, it would be the height of presumption to promise a speedy cure, for it will take long to make a decided impression on the case. When a farm has gone out of cultivation, the farmer has to begin by weeding and cleaning the land, and he knows a long time may elapse before he can get an adequate return for his labor, however certain he may feel that he will ultimately do so. In like manner, with cases of long standing, we should tell the patient, or her friends, that, however sure we may feel of ultimate success, it may be long delayed, and that, while convinced of the efficacy of surgical treatment to cure local affections, we cannot be answerable for the impediments thrown in the way by the patient's bad constitution, the result of inherited predisposition, or of adverse vital influences. Disease depends not so much on any given lesion, as on the nature of the constitution thereby affected, and on the quality and on the intensity of the living force that stirs it into action. Thus, a confirmed cachectic state of the system may greatly impair the utility of surgical treatment, the uterine mucous membrane participating in the unhealthy condition of the other mucous membranes, so that, for instance, the application of a solution of nitrate of silver to the ulcerated cervix will only give temporary relief. Cases are occasionally met with in which congestion or subacute inflammation of both the body and neck of the womb has lasted for a long time; the cervix is exquisitely sensitive when touched with the finger, pelvic pains are severe, and nervous symptoms singular and numerous. In these instances of "irritable womb," the ulcerated state of the cervix suggests the utility of caustic treatment, but while in some cases the result is very satisfactory, in a limited number, apparently similar, surgical treatment does more harm than good, and it is necessary to postpone it until inflammation of the body of the womb has yielded

to other measures. Such cases can only be found out by actual experiment, and should not be allowed to invalidate the common-sense precept to cure all tangible, all visible lesions, in hopes of curing, by so doing, the deeper-seated lesions and their reflex symptoms. It is in the very weak that chronic diseases of the sexual organs will be most frequently met. During intra-uterine life, the patient's mother may have been seriously ill, childhood may have been unusually sickly, menstruation wrong from the first, one or other mucous membrane always out of order, social circumstances dead against recovery, random treatment or mismanagement may have firmly rooted disease. When chronic disease occurs in unmarried women of strong constitution, it will generally be found that, being young, strong, and courageous, the burden of household duties was unfairly placed upon their shoulders, or the endless nursing of a near relative. In course of time, these women have been overtaken by some uterine affection, and they have wrestled with it for years, without consenting to take care of themselves; noble creatures, in whom the merit of so much devotion is spoilt by pride. In married women chronic disease of the womb can often be traced to miscarriages, to too early getting up, leading to defective involution, or to bad instrumental labors. What makes chronic disease so difficult to cure is the little control we have over many of the causes of uterine affections, and the circumstances that foster them. Any average doctor can cure acute disease, Nature does it for him, if he will let her alone; but the highest test of medical skill is to cure chronic disease of the reproductive organs as presented to us in this nineteenth century. In such cases the practitioner will have to fight against the tendency to let treatment run into a groove, by occasionally reviewing all the circumstances of the case, to see if the key of the position has not changed; but, under the most favorable circumstances, I do not know a more difficult task than to buoy up the hopes of patients reduced to despondency by repeated relapses. It can only be the result of great faith in the powers of Nature and in one's own skill, combined with implicit confidence on the part of the patient. In treating such cases, one should particularly bear in mind the lines of some French poet:

> " Pour celui qui gémit, qui souffre et se lamente,
> Souvent ce n'est pas tout, de trouver un Docteur;
> Il a besoin aussi d'une voix caressante,
> Qui déride son front et console son cœur."

While thus doing our best to *cure* our patients, we must bear in mind the fact that they generally act as if they only wanted to be to a certain extent relieved; three-fourths of my patients leave off treatment before they are cured. Treatment is tedious and expensive; so, when considerable improvement has been obtained, many patients give up treatment,

trust to Nature, live as usual, and comfort themselves by abusing medicine.

When Leonardo da Vinci's "Last Supper" is first seen, it looks a hopeless daub, but when the mind has rested on it for a time, from under the paint of successive restorations the outlines of beauty become more and more clear, and the master's genius stands revealed. A pathologist feels something similar when called upon to study a complicated case of several years' duration. At first he is bewildered by an incongruous array of facts, assertions, and suggestions; but if, without making any appreciable mental effort, the mind is allowed to brood quietly over this confused mass of details, they will soon begin to crystallize into definite groups, and the groups of facts will range themselves into a certain order, which will give a clear perception of the history of the case, and a conviction of what is best to be done for the patient. The art of interrogating female patients, so as to derive the greatest amount of information without hurting their feelings, is no easy matter. In the first place, the practitioner should settle the patient so that the light may fall upon her face, whereon, as in a map, is often traced the outline and 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, and it is worth while listening patiently to a long rambling tale, as it will certainly afford some hints, and at all events give a practitioner the exact measure of his patient's mind.

After thus listening, the practitioner will then have his turn; and, according to some method of his own, he should take a general survey of the principal functions, the nervous system, sleep, the heart, the phenomena of circulation, the appetite, the digestion, leading to 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 they are not ashamed of having lungs or a heart, and they feel at home with the doctor by the time he inquires into the state of the bowels. Their degree of regularity naturally leads to questions respecting the uterine functions; whereas, if these last had been abruptly put in the first part of the interrogatory the patient would probably have been flurried, and the doctor annoyed by unsatisfactory answers. In answer to the usual question, "Is everything else regular?" how often have I received an affirmative answer from a girl or her mother, when, on further inquiry, I found that the menstrual flow was either painful, profuse, or scanty. Sometimes, indeed, a patient has assured me that it "was quite regular;" "so regular that it returned every fortnight or ten days;" while another, on the con-

trary, will affirm that "it was never regular, because it returned every three weeks." We must, of course, be prepared to answer any questions, but it would be the height of indiscretion to put leading questions to patients about connection, for it is impossible in acute and does no harm in chronic cases. A full hour is required to unravel the intricacies of a case that has lasted for ten years, and even then it is best to give a guarded prognosis until one has ascertained how the patient responds to therapeutical agents, local and general; for it is impossible to know a constitution, until it has been tried by the touchstone of remedies.

When the symptoms indicate some inflammatory condition of the womb, injections and other appropriate treatment should be ordered without an accurate examination, as these remedies often suffice to cure the complaint; but when an examination becomes necessary, the reasons should be stated simply but firmly. The failure of repeated courses of tonics, even when combined with the use of vaginal injections, for weeks or months, will appeal to the good sense of the patient, and the assertion of the impossibility of knowing what is best to be done without more precise information, will impart the conviction of its being a duty to submit to an accurate examination; and the higher the rank, and the more virtuous the patient, the less trouble will be found in making her understand the urgency of submitting to so disagreeable a necessity. But, while laying a painful duty before his patient, the medical attendant should be most considerate in his manner, or the patient, while respecting his talent, will deem him incapable of comprehending the moral sufferings attendant on what was only conceded to a strong sense of duty.

It has been often stated that we should always insist on the presence of a third party whenever we examine a married woman. I have taken a different estimate of women's sense of honor, and, during a long course of practice, have never had to repent having done so. The generality of consulting physicians adopt the same line of conduct in London, Edinburgh, and on the Continent. The amount of confidence shown by women to the profession in this respect, varies extremely, but I may safely say that it is greatest in proportion to their rank and mental culture; for while the lower orders have not this delicate perception of implicit trust, the higher not only feel that they can rely on the honor of gentlemen, but are generally of opinion that it is sufficiently painful to submit to an examination, without having the additional annoyance of its being witnessed even by a mother. The best plan, therefore, is to let patients do just as they like, without objecting to or requiring the presence of a third party.

It is, of course, in the power of an unscrupulous woman to try and extort money from a practitioner who may have examined her alone, by attacking his reputation; but when it becomes a question of protecting one's self against women capable of perjury, it may be easier to do so

against one than two. A jury refused to believe that a practitioner of high reputation had criminally used a patient, although she swore to that effect, but a verdict was lately given against a clergyman, because two women swore that he had abused one of them, and, nevertheless, it was afterward proved that they both committed perjury. The practitioner must bear in mind, that to become an object of interest is an innate and characteristic feeling of the female mind; and if in the prime of life this feeling is thwarted or disappointed in its natural and legitimate form, it may deviate into some other channel; the ruling passion being displayed in attempting to elicit surprise or commiseration, when love cannot be excited. Hence, in confirmed hysterical affections the symptoms generally become more numerous and urgent in proportion as the patient receives more sympathy. When ovario-uterine disease has induced marked hysteria, we should constantly remember that the utmost duplicity and cunning have been occasionally displayed where we should expect nothing but the most rigid truth, and that the whole energies of the patient's mind may be bent on deception.

Sir Charles Locock was consulted by a lady respecting the time of her confinement; she assured him she had had criminal intercourse on several occasions, but he found unmistakable physical signs of virginity. He credited another lady with a criminal intercourse with several members of her family, until she mentioned that she had cohabited with Jesus Christ, which led to her being found insane. A still more surprising fact is, that a woman has been known to keep a journal, in which she wrote down circumstantial details of imaginary criminal intercourse, as having actually taken place with one of those with whom she associated on terms of simple friendship. All this is very sad, but it only shows that the medical profession has its dangers, like others. Another important point about which a practitioner ought to have his mind fully made up, is whether or not we are justified in examining unmarried women. It was formerly believed that only married women could have inflammation and ulceration of the womb, and I still occasionally meet with an old practitioner who sticks to this belief. The contrary is too well established, and the majority of my bad cases have been virgins. Dr. H. Bennet[1] has given *post-mortem* evidence of aggravated uterine inflammation in virgins, and I find[2] that Giraldes, on opening the bodies of young virgins in the dissecting-room, has sometimes found the body of the womb, as well as the oviducts, injected and full of pus. Such being the case, it is justifiable to examine young women, from fifteen to twenty years of age, if we distinctly recognize in them a disease that is undermining their strength and can be cured in no other way. These distressing cases are very rare, even in consulting practice, and when I

[1] On Uterine Inflammation, 4th edition.

[2] Felix Guyon, Thèse de Paris, 1856.

am consulted about a delicate young woman with bad menstrual periods and a yellow vaginal discharge, persistent back pain and inability to walk, my plan is to try rest and tonics for three months, and I seek to amend menstruation. If there be no improvement at the end of that time, I order vaginal injections and cold sitz baths in addition to tonic treatment. I continue this for six months, and longer if there be signs of improvement. If after six months of this kind of treatment the patient gets worse instead of better, I make a digital examination, which guides me as to the utility and propriety of making an examination with a small speculum.

Too much discretion cannot be shown in estimating the information derived from such examinations. It would be most unscientific to conclude that a woman is not a virgin because there is no hymen. Some virgins have no hymen, some a thin membrane, more or less destroyed by vulvar inflammation, vaginal discharges, and by the frequent passage of the tube used for vaginal injections. Women of a lymphatic temperament, built on a large plan, and who have been more or less accustomed to leucorrhœa all through life, may be virgins though the vagina may easily admit two fingers.

I feel convinced that a similar distention of the vagina may be brought about in virgins by the frequent occurrence of forcing pains symptomatic of congestive and inflammatory uterine conditions, even when the womb remains well-placed. I make a point of stating this emphatically, because my experience teaches me, that medical men do not always rightly interpret these facts, and their importance in a medico-legal point of view is obvious.

With regard to therapeutics, loss of faith has been justly deplored by Sir Thomas Watson, Dr. Copeland, Dr. Wilks, and I think I justify the old belief in many drugs, by what I have written in the following pages. I should suggest to the younger men to give less time to microscopical studies, to learn to prescribe, and not shirk the writing of prescriptions, by ordering some one or other of the ready-made medicines that fill the columns of our medical papers. Those who from sheer idleness order Vin de Baudon, Pilules de Blancard, Pilules de Vallet, etc., teach quackery to their patients, for these patent medicines are wrapped up in a flaming account of the number of complaints to be cured by some one remedy.

Cold water should be avoided during menstruation, but the daily use of a warm hip-bath is then more wanted than at other times, and with regard to the administration of certain medicines during menstruation, the rule is to leave off all ordinary medicines at the menstrual periods, and as it is frequently desirable to interrupt a course of medicine, it is a convenient time to do so; but I have not found any inconvenience from letting patients continue a course of steel or quinine dur-

ing menstruation. It is best to stop the exhibition of the mineral acids, although I have known them to have been taken at menstrual periods without checking the flow. In ordinary cases it is commendable to advise patients to leave off injections, but if it be a question of a long-standing case of uterine ulceration, with a great tendency to relapse, it is better to let the patient begin the usual injections on the third day of the flow, provided they be warm. Occasionally I have advised their use during the whole course of menstruation, and with marked advantage. Notwithstanding the length to which I have written on medicines, I give few, and avoid, as much as possible, obscuring their effects by prescribing many at the same time. Ten or twelve active ingredients in one mixture neutralize each other; and if the total affects the system, it is by the nausea it gives rise to. It is also often judicious to consult patients upon the non-essentials of treatment, so as not to render medicine unnecessarily disagreeable by the addition of syrups, which make physic more repulsive in the estimation of many; the same may be said of cinnamon or orange-peel. A real practitioner is not afraid of giving large doses, but when he meets with exceptional constitutions and nervous subjects, who can bear neither large nor average doses, he tries very small quantities often repeated. Thus a patient of mine is driven wild by insomnia and headache from taking $\frac{1}{6}$ of a grain of morphia, but gets a moderate amount of sleep from taking $\frac{1}{40}$ of a grain several times in the course of a day. It is well to order only a small quantity, not more than two or three ounces, to those who can bear very little medicine, as they naturally feel annoyed at having to pay for a load of physic they cannot take. In chronic cases it is judicious to occasionally make a fresh trial of approved remedies suitable to the emergency. For instance, to a patient whose health has been broken down by uterine disease and pelvic abscesses, I have lately given one or two grains of morphia a day with great benefit, although the same remedy had been repeatedly tried on several occasions during the previous ten years by myself and by other practitioners, and had always disagreed.

To conclude: We must trust in nature, and believe that an Almighty power is operating in the human frame, ever working to restore health by successive changes and renewals, with definite laws, and successful issues often ascribed to our remedies. Let our motto be that of the father of French surgery:—"Je la pansay, Dieu la guarit."

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CHAPTER I.

UTERINE SURGERY AND MODES OF EXAMINATION.

Diseases of the reproductive organs are made known by two modes of examination, one extra-uterine, the other intra-uterine, and these examinations may be digital or ocular.

1.—Extra-uterine Examination.

Vaginal Examination.—No other mode of examination gives so many valuable elements of diagnosis as that made with the finger; it is often the only examination required, and the only one that can cause no serious mischief, if done with considerate gentleness. It may, however, be followed by abdominal pain and distress during the course of the day, and I have known a patient with painful chronic cervicitis to suffer very much for three days after a very gentle examination. Should there, however, be a small peri-ovarian abscess on the point of bursting into the peritoneum, the gentlest digital examination may hasten the occurrence, as occurred in a case related by Dr. Gillette,[1] in which this caused the death of the patient, by acute peritonitis, forty-eight hours after the examination. An occurrence so rare must be risked, for if patients suffer from a continuance of distressing and obscure pelvic symptoms, their nature can only be made known by a vaginal examination, which alone can show whether the use of any instruments is required to confirm the diagnosis and to assist the cure.

With regard to the best mode of making the examination, practitioners are biassed by the position adopted in their native countries for the delivery of women, but I am at a loss to understand how the abdomen can be well examined unless the patient recline on her back. In the great majority of cases it is perfectly unnecessary to place the patient on a table, as has been sometimes recommended. A table suggests an operation, frightens women, and would effectually prevent many from seeking to be cured. A bed will do, but a hard sofa is better, particularly one that has no lateral lean-to. The patient's dress being loosened, she should be told to lie quite straight on her back, the head and shoulders being but

[1] Gazette des Hôpitaux, Mai, 1872.

slightly raised. I kneel on the left knee, to the right of the sofa, and having warmed my hands if it be winter, and seen that the nails are smooth and not too long, I gently pass the hand over the abdomen to ascertain its size, its suppleness or want of elasticity, and I search for abnormal growths. By so doing I ascertain what amount of pressure the patient can bear without feeling pain, particularly in the ovarian and uterine regions. It is well to percuss the abdomen, to measure the amount of flatulence and the presence of serum in the peritoneal cavity. If the walls of the abdomen be thickly lined with fat, or if nervousness give rise to involuntary contraction of the abdominal muscles, the examination will be facilitated by bending the thighs at right angles with the pelvis, and by diverting the patient's attention by making her talk.

Bearing in mind the information thus obtained, the right index finger should be well greased with oil, lard, or cold cream; for, notwithstanding the objection taken to those bodies on the plea of possible rancidity, they are the best that can be used, for the soap and water that has been recommended instead, will not protect the finger from fetid discharges and cancerous secretions. As it approaches the vulva, the finger notices if there be any external piles, or anything amiss at the opening of the vagina, whether the hymen be present, if so, whether it be hard and flesh-like, or an elastic ring, and if the entrance to the vagina be tender and spasmodically contracted. The finger, when in the vagina, should successively press on the rectum and on the urethra, to ascertain if they be implicated, and having reached the neck of the womb, it is well to measure the vagina, and to ask one's self whether it dips down toward the coccyx, or runs more in the direction of the axis of the pelvis? Whether it be of normal temperature? short? deep? narrow? capacious? Whether it contains any foreign body? if so, whether it be something inorganic evidently introduced, or an organic substance, benign or malignant, growing on the walls of the vagina, or on the os tincæ, or coming from the cavity of the uterus, or a fibroid embedded in its substance? He will then ascertain whether the mouth of the womb be opened or closed, large or small, the cervix too long, too pointed, too small, or too large, indurated or ulcerated; whether the body of the organ is in its proper position, anteverted, or retroverted, or flexed, and in what direction, larger or smaller than natural, of proper form and density, or indurated, fixed or movable, and with any ovarian or pelvic complications.

While the right index finger gives this information, the left hand should be gently but firmly placed over the womb, so as to steady it and measure its size and tenderness. If, in the course of this examination, one finds unexpected complications, it will be well to place one's self on the left of the patient, and to use the left index finger for the internal examination, while the right hand presses on the hypogastric region. The two hands then act conjointly in ascertaining the condition and relations of

the uterus. If it is in its normal position, then the os uteri will rest on the end of the left index finger, the fundus will be distinctly felt by the other hand, in a line drawn from the os in the direction of the umbilicus. If it be anteverted the os will point backward, toward the hollow of the sacrum, while the fundus will be felt by the index finger just behind the symphysis pubis, pressing down upon and perhaps parallel with the anterior wall of the vagina. The pressure of the index finger on the anterior wall of the vagina is not enough to positively determine this point, so it is essential to make pressure at the same time with the other hand just above the pubic arch. It will thus be easy to measure the size and shape of the body of the womb, for it will be held firmly between the fingers of the two hands, and its outline and shape may be determined in thin, unirritable women, and when the womb is rather lower down than usual. This does not apply to women who are built on a large scale, with great width of pelvis, with the abdomen well coated with fat, and made bulky, if not pendulous, by repeated gestations. On the other hand, the womb is sometimes so high that, with long fingers, I can scarcely reach it, and am utterly unable to twist the cervix right and left. If, in such cases, the young practitioner attempt to circumscribe the womb according to the instructions that I have quoted, he will find it impossible to do so.

Notwithstanding what has been said to the contrary, it is generally difficult to explore, in this way, the posterior aspect of the uterus. It may be attempted, by passing the left index finger to the posterior cul-de-sac, hooking it up behind the cervix uteri, raising this upward, drawing it forward, and at the same time pressing the outer hand in the direction of the place of the left index finger. In a thin subject, when the pelvis is shallow, it is sometimes possible to detect whatever may be abnormal, but generally this mode of examination gives unsatisfactory evidence, and it is better to examine by the rectum.

In an ordinary case, it is well to respect the feelings of women by delaying an examination until the menstrual period has completely ceased; but when the flow lasts too long, is too abundant, and seems to depend upon some morbid condition, complicating menstruation and independent of it, the examination should not be delayed, and the diagnosis may even be facilitated by the lower position of the womb, and by the more patulous state of its mouth.

Rectal Examination.—The root of the nail of the right index finger, and that part of the digital pulp that is overlapped by the nail, having been well coated with soap, I kneel on the left knee, to the right of the patient, lying on her back, and I gently press the finger against the anus, which it enters without difficulty, if the patient be told to force as if she were at the closet. As only the walls of the rectum intervene between the finger and the womb, its increase of size, or irregular outline, can be easily detected. Should doubts arise as to whether the detected growth

be part of the womb, or an independent formation between the rectum and the vagina, or on the peritoneal cavity, another mode of examination may clear up the difficulty; but before mentioning how to examine by the "double-touch," I may state that the late Dr. Simon, of Heidelberg, has shown the possibility of exploring the rectum up to the sigmoid flexure, by placing the patient under chloroform, and introducing a moderately small hand into the rectum. Mr. Maunders has praised this mode of exploration, but it has led to the rupture of the upper part of the rectum in two instances, and ought only to be resorted to in cases of great urgency. By ascertaining in this manner, that there was no obstruction up to the sigmoid flexure, surgeons have been induced to perform colotomy, and have been enabled to remove stone from the female bladder, but I am not aware that this procedure has been used for the detection of diseases of the sexual organs.

Double Touch.—The patient should be placed across the bed, and on her right side, the right leg and thigh being straight, the left limb somewhat flexed on the abdomen, the surgeon, standing on the right side of the bed, introduces the left index finger into the vagina, and the right index finger into the rectum, which enables him to measure the size, and to appreciate the nature of whatever abnormal may intervene.

Perpendicular Examination.—The desire to save patients annoyance often prevents our examining them in the upright posture; but we must bear in mind that woman was made to stand upright, and we can only have a very imperfect knowledge of the nature and extent of all uterine displacements, if we do not examine women in the erect posture. In some cases, even, it is only by telling the patient to walk half a mile before coming to consult, that we are able to take a correct estimate of the displacement, and of its connections with adjacent organs.

Genu-Pectoral Examination.—Dr. Henry F. Campbell has shown the utility of this position, which brings air-pressure into play, for the treatment of displacements, and has proved its essential service in cases of retroversion or retroflexion of the uterus, more especially during the early months of utero-gestation, to avert miscarriages, to facilitate the rising of the uterus from the pelvis, and to anticipate the liability to impaction. In cases of retroversion and retroflexion, complicated with metritis, frequent resort to the knee-position has enabled a patient to tolerate a Hodge's pessary, which otherwise could not be borne. In sterility due to retroversion or retroflexion, conception has followed a single coitus in the knee-posture; in retroversion of the gravid uterus about the fourth month, with retention of urine, replacement can be effected most readily, and with the least risk, by adopting the knee-posture and thus calling to our aid pneumatic pressure; so also when fibroid tumors of the uterus are impacted in the pelvis. In prolapse of the ovary, this position has also proved of service.

Ocular Examination.—In 1816, it occurred to Récamier, that ulcers of the womb might be dressed through a tube inserted in the vagina, and the practice was soon adopted on the Continent. Although inferior in value to the digital, the speculum examination vastly improved the diagnosis of diseases of the womb, permitted some of them to be speedily and effectually cured, and gave to the study of diseases of women an impetus that has already lasted sixty years. We are so justly proud of being able to study disease by means of the laryngoscope, the ophthalmoscope, and the endoscope, that it seems singular that the speculum uteri did not speedily approve itself to the professional mind in this country; but it attracted no attention when Dr. Balbirnie, in 1836, published a work on diseases of the womb, and, although he adequately showed the value of a new method, it passed unnoticed until 1844, when Dr. H. Bennet published his papers on uterine pathology.

The eminent obstetricians of Edinburgh and Dublin immediately adopted this additional means of diagnosis and of cure, but as I have already stated, in London it was long opposed as useless and immoral. This instrument has been variously modified by many practitioners, but I shall only notice some of the most useful.

Ferguson's Speculum is, perhaps, the most used in this country; its diameter varies from half-an-inch to two inches, and the smoothness of its external coat of india-rubber, its internal high reflecting power, the simplicity of its action, commend it to the beginner, and it is the best for the application of leeches, or of any strong caustic. It is better to use a speculum with a bevelled extremity to meet an occasional emergency; for instance, an irritable fibroid on one side of the womb may be avoided, by placing near it the shortest side of the instrument. I must, however, observe, that whenever I have known a medical man to undervalue the use of the speculum, it was always a glass one he was in the habit of using. If, inside the cervix of his patient, there happened to be an ulcer, he effectually concealed it by pressing the circular rim of the instrument on the lips of the womb, and then denied the presence of what he did not know how to look for. This will explain how, on the same day, the same patient has been told by one gentlemen, that she has an ulcer in the womb, and by another that there is nothing the matter with it, according as the first practitioner used a bivalve speculum and the other a glass tube.

I have never found a glass speculum break in the vagina, nor have I read of such an occurrence; but this accident did occur to a friend of mine in the country—I cannot understand how, unless the instrument was in a very faulty condition. The patient was very much frightened, and remained without moving for several hours, while the doctor went for instruments and assistance, but there was no mischief done. On the occurrence of a similar accident, it would be well to pass the index finger,

to ascertain if it can remove the nearest fragments, and then to introduce a larger speculum, to protect the vagina while the fragments of glass are being withdrawn.

Dr. Wiltshire has lately had speculæ made of toughened glass, but it is the property of glass in this curious state to explode without warning, and such an occurrence during an examination would be very disagreeable.

The Lever Speculum.—This is, perhaps, the best for general use; it is formed by two half-tubes articulated at the outer extremity of the instrument, so that the surgeon may, by turning a screw, divide the half-tubes, display the cervix, and to a certain extent permit the separation of its lips, so as to exhibit the part of the cervical canal that is nearest to the os uteri. To withdraw the instrument, it must only be partially closed, or it might firmly grasp a fold of the vagina, and the attempt to withdraw it would give intense pain. Should such an accident occur, the screw must be reversed so as to separate the half-tubes, then the vaginal fold will slip away, and the instrument be easily removed. Bearing in mind the possibility of this accident, Mr. Weiss has had the happy thought of paring away the opposite sides of the half-tubes, near their point of articulation, and, before using the instrument, one should ascertain that its parts move smoothly one upon another, or the patient will surely be jarred, if not hurt.

Duckbill Speculum.—Mr. Coxeter has lately modified the lever speculum, so as to give its extremity the resemblance of a duck's bill. This instrument has no wooden plug, and approximates to the bivalve speculum.

Bivalve Speculum.—This requires great skill and practice to be of service, but it cannot be dispensed with when morbid lesions lurk in the cervical canal. By adjusting the tips of the instrument within the lips of a patulous os uteri, it is possible to see an ulcer or a small polypus, which would otherwise escape notice, and to apply caustic in full force, just where it is wanted.

Univalve Speculum.—This instrument, invented by Dr. M. Sims, differs entirely from those just described, and it may be described as a *levator perinei* speculum. After the patient "*has been rolled over on the front, in a left lateral semi-prone position, so as to simulate as much as possible the position on hands and knees*," the speculum is to be introduced into the vagina, and to be handed to an assistant, who forcibly raises the perineum, and allows the pressure of the atmosphere to distend the vagina, and to bring the os uteri into view. This mode of examination is admirable to elucidate a recondite case, and for the performance of delicate operations on the womb and the vagina; but the profession in America employ it in all cases of uterine surgery, which is like using a steam hammer to kill a fly. It is bad enough to be obliged to use a bi-

valve or a lever speculum, in the way I have described, to cure the minor cases of uterine disease, and as these instruments enable a surgeon to cure the patient, I do not think him justified in using a more disagreeable mode of examination, requiring the presence of two men instead of one.

Speculum Examination.—The very erroneous notion still extensively prevails, that a speculum examination should be made on a bed, which is often unsuitable, because it is too soft, or inconveniently placed, and badly lighted. Of course, if the examination cannot be otherwise managed, it must do; but a hard sofa is best, because it can be easily placed to catch the best light available. In fact, I think more harm than good is done by a speculum examination, unless made with plenty of daylight.

The digital examination determines the choice of the instrument to be used and the position of the patient, and whatever instrument is used, to bring the os uteri in view, is very easy or most difficult. Nothing easier, if the vagina be of moderate calibre and the womb well placed; nothing so difficult, if the vagina be very lax and the womb much anteverted, retroverted, or lying diagonally across the pelvis. It stands to reason that a very small speculum should be used for a very narrow vagina, and a large one if the passage be much relaxed. If I find the womb well placed, or only moderately displaced, I arrange the patient on her back, the seat being well raised by one or more hard cushions, and in full light. The left leg and thigh should be well flexed, and the right foot may rest on the sofa, or on a stool placed on the floor, to the right of the sofa. It will be obvious, that to make any kind of specular examination, the clothes must be raised, but before doing so, each lower limb should be covered with a large cloth or thin shawl, if the patient does not wear drawers, for no part of the body should be uncovered except that requiring investigation. I then choose the instrument most suitable to the case, and kneeling on the left knee, to the right of the sofa, I separate the labia with the right index and keep them apart by means of the left thumb and index; I then depress the perineum gently, evenly, but firmly, with the end of the instrument, and gradually push it upward as far as it will go, by a to and fro movement. If there be any difficulty, it is to be surmounted, not so much by forcible pressure, as by giving a rotatory movement to the instrument, if it be cylindrical, or by the to and fro lateral distention of the vagina. When the instrument has reached a sufficient depth, if the os uteri does not present, it must be sought for by withdrawing the speculum about an inch, or by changing its position, or by turning the screw of the instrument, so as to widen the field of vision. The os uteri often remains out of sight, because the extremity of the speculum has been introduced too far, and its gradual withdrawal will bring the os uteri in view. If the mouth of the womb be patulous, it is better to use the bivalve speculum,

so as to be able to evert the lips of the womb by means of the tips of the instrument, and thus display part of the cervical canal. It is better to examine the patient on her left side, when the womb is much retroverted or retroflexed.

A Speculum Forceps with bent handles is required, and a uterine tenaculum.

Uterine Tenaculum.—Simple ideas come late, and it is only recently that the idea of seizing one of the uterine lips, by means of a single or a double-pointed hook, so as to bring the womb into the right position, or to retain it there, and prevent its getting out of convenient reach, has been introduced into uterine surgery. Before describing how to use these instruments, it behooves me to advert to instruments very useful for surgical applications.

Metallic Probes.—Bits of flexible wire, aluminium, or German silver are useful to apply strong caustic to the cervical canal. If the probe be dipped in water, a flattened film of cotton-wool can be tightly wrapped round it, and while this is useful to clean the cervix of its mucus, another probe similarly prepared can be soaked in a strong solution of nitrate of silver, carbolic acid, or in acid nitrate of mercury, and this probe can be carried through the os internum, so as to insure the action of the caustic on the whole length of the cervical canal.

Vulsellum.—A tenaculum is all that is required to steady or to straighten the womb, for the passing of the uterine sound, of a tent or an intra-uterine pessary, but when it is necessary to bring the womb down low enough to operate on the internal surface, a vulsellum is wanted. It facilitates the swabbing of the womb with nitric acid, permits the removal of small polypi, of certain fibroids, and of projecting portions of malignant growths.

Scarification.—All scarificators are bad imitations of leeches; but these may not be attainable, or the patient may object, and then scarification is useful, if the cervix is soft and congested, for by puncturing it in half a dozen places, one may get a small wineglassful of blood.

Syringe.—A small metal syringe, made narrow enough to pass through a medium-size Ferguson speculum, and with a long pointed extremity, is useful to throw water over the cervix, when caustic has been applied, for the pain experienced by patients when caustics are used, often depends on small portions of the caustic running upon the vagina, where it is very injurious.

Porte-Caustique.—Simpson's porte-caustique consists of a hollow silver tube, in size and shape closely resembling a sound; it contains a flexible stilette, which it fits accurately. As soon as its point is found to have reached the fundus of the uterus, the stilette is withdrawn, and through the instrument is pushed up, by means of the stilette, a piece of solid nitrate of silver, reduced to the requisite size and weight, till it is

fairly lodged in the cavity of the uterus. Similar instruments have been devised by other men. Spregelberg calls his "a uterine pistol;" popgun might have been a better name.

Pressure in Uterine Surgery.—Dr. Emmet, of New York, thinks highly of sponge-tents, as a means of applying methodical pressure to the tissues of the hypertrophied womb, and goes so far as to say that they do more good in a week, than three months of any other treatment, so the plan deserves a fair trial on this side of the Atlantic. The sponge-tents seem to soften the tissues of the cervix and to reduce their bulk, the pressure destroys fungoid granulations of the cervix, mucous polypi; and a fibrous polypus, as large as a pigeon's egg, is said to have been thus destroyed.

Cotton Wool.—Fine cotton wool is useful to remove mucus from the diseased surface of the womb, and to soak up the surplus of whatever liquid may have been applied by this means. It is often good to leave, in close apposition to the ulcerated os, a small dossil of cotton wool, tied round with a thread, so that the patient may be able to remove it before going to bed. The wool will imbibe whatever may still remain of the fluid used, and prevent it staining the patient's linen. The dossil will also absorb the blood and the increased secretion from an irritated mucous membrane. If a strong alkaline caustic has been used, the wool should be steeped in vinegar and water, or in a solution of carbonate of soda if a strong mineral acid has been employed. Cotton wool steeped in tincture of iodine, and then dried, is sold as iodized cotton, a similar preparation has been made with cotton wool and a strong solution of nitrate of silver; the iron cotton recommended to check hemorrhage is prepared by soaking lint or cotton wadding in the liquor ferri *subsulphatis* of the American Pharmacopœia, the strength generally recommended being one part of the liquor to three or four of water. These preparations are not so good as the more or less concentrated solutions of the same drugs, applied to, or left on, the diseased surface of the womb, by cotton wool tampons. It has lately been recommended to use dried cotton wool that has been boiled in a strong solution of potash, to cleanse the os uteri of tenacious mucus, but I do not find this to be necessary, and the presence of tenacious mucus only suggests to me more patience and a freer use of whatever caustic may be suitable.

Glycerine.—In the previous editions of this work, I demonstrated so fully the utility of glycerine, when boiled with starch, that it was introduced into the British Pharmacopœia as an ointment and a plaster. It has strong affinities for water, and even when the vaginal mucous membrane is intact, it sometimes draws away by endosmosis a watery fluid from the womb, and while thus useful to reduce uterine congestion, it has also antiseptic properties. When applied to an ulcerated surface, it sometimes draws serous fluid from it to such an extent, that the patient

may have to change the cloth several times in the day. Erosions and slight ulcerations may be cured by repeating the application, which is also a valuable dressing in many cases of extensive ulceration, after the excision of polypi. The alternate use of glycerine, and of a solution of nitrate of silver, is still more useful under similar circumstances.

Of this way of using glycerine Dr. M. Sims says, "Take some fine cotton, as much as can easily be held in the hollow of the hand, immerse it in tepid water, and squeeze it gently under the water until it becomes perfectly wet, then press all the water out of it, and saturate it with Price's glycerine. To do this, lay the moistened cotton in the palm of the left hand, spread it out circularly for an inch and a half in diameter, more or less as may be needed, scooping it out in the centre, then drop half a teaspoonful of glycerine on it thus held, and rub it into the cotton with the point of the finger, then pour on a little more glycerine, and rub it in, and so continue till the cotton becomes saturated. When finished, the cotton should feel soft and pulpy, should be about an inch and a half in diameter, and about half an inch thick." I do not steep the cotton-wool in water, but I firmly tie a bit of strong thread round a sufficient quantity of it, and I well soak it with glycerine in the way previously described. I apply it by means of the forceps, and through the speculum, to the sore spot, pressing firmly the forceps until the speculum has been withdrawn a couple of inches. The patient should be told to wear a cloth, and to withdraw the cotton-wool, by the thread left outside, at night or on the following morning.

Powders.—Récamier covered the ulcerated os uteri with a tablespoonful of starch before withdrawing the speculum; Aran did the same, but added a teaspoonful of laudanum, and lately it has been suggested to blow tannin or powdered nitrate of silver into the cavity of the womb; but I have pointed out better ways of fulfilling the objects in view.

2.—Intra-uterine Modes of Examination.

The Uterine Sound.—Récamier used a probe, to study the deeper-seated diseases of the womb, and a curette, to remove from its internal surface small polypi and fungoid granulations; but it was Simpson who made us fully aware of the great value of the uterine sound, as a means of diagnosis. His instrument is too well known to need description, but is often made of an unbendable metal, to which is given an exaggerated curve, and I prefer Huguier's sound to Simpson's, because it takes the natural direction of the womb; the instrument should be made of German silver or annealed copper, to admit of its being bent to suit the peculiarities of the case.

Before the use of the uterine sound, surgeons have removed retroverted and inverted wombs, mistaking them for fibrous tumors; Roux did so twice, and Auguste Bérard once. Invaluable as it is, the uterine sound should never be used if a wax bougie will do as well, and it is clear to me, that it is recklessly used, from the free and easy way in which its use is mentioned by the younger men, in the discussions at the Obstetrical Society of London, and from the surprise expressed to me by foreigners, at the rough way in which it is used at some of our hospitals for diseases of women. In preaching caution in this respect, I follow good men, Scanzoni, P. Dubois, Bernutz, and Oldham. It must be borne in mind, that pregnancy is so easily overlooked or mistaken for a morbid affection of the womb, during the first months of gestation, that precision of diagnosis may be purchased at the expense of abortion. This occurred twice to Nonat, once to Huguier, once to Valleix, once to myself, and, as for one medical man gifted with the moral courage to own a mistake, it may be safely said there are many who keep it to themselves, so doubtless abortion has not unfrequently been unwittingly brought on by the uterine sound, particularly when we remember that an early miscarriage is easily mistaken for profuse menstruation. Occasionally the uterine sound has only hastened an inevitable catastrophe; thus two of Récamier's patients died the day after he had used his curette, but it was found, on *post-mortem* examination, in both cases, that an old ovarian abscess had burst into the peritoneum. Even when there were no long-standing pelvic lesions, careful operators like Huguier, N. Guéneau de Mussy, Broca, and Sirédey have seen the use of the uterine sound followed by speedy death. It has very often caused severe uterine neuralgia or metrorrhagia or pelvi-peritonitis, additional complaints that were of course set down by the operator to the account of the original uterine disease, whereas the patient clearly owed them to injudicious treatment. Neither is it right to make light of the perforation of the womb, for it is sure to kill some woman or other, the bearer of some unsuspected pelvic disease. The possible impunity of perforating the womb was known to Récamier, for it occurred to him to do so twice with his curette, and Simpson and Mr. Lawson Tait seem to have repeatedly perforated the body of the womb, with the uterine sound, without ill effects. The same accident occurred twice to Dr. Routh and to Dr. Liebman. In a case of the kind that occurred to Aran, there were only slight uterine colics, but death occurred a few hours after, and in Dr. Wynne Williams' fatal case, he had perforated a cancerous fundus.

In treating, elsewhere,[1] of defective uterine involution, I reminded our too active uterine surgeons that, for several months after parturition, the walls of the womb are yellower, softer, and more easily pierced, and the

[1] Lancet, July and August, 1877.

same caution is taught by the frequency of some unsuspected morbid condition of the body of the womb and of its surrounding tissues. The extreme facility with which Dr. Liebman perforated the womb, in his two cases, suggested to him to study with what degree of ease this could be done in the dead-room. He has not completed his researches, but he has most kindly placed at my service the very interesting results he has already arrived at. He has already operated on some one hundred bodies, as they were sent to the dissecting room of the Trieste Hospital, after death due to the usual variety of diseases to be met with in a general hospital, and only one case was puerperal. What strikes one as remarkable is, that out of 89 of these cases that he carefully studied, in only 28 did Dr. Liebman find the genital organs in a perfectly normal state, whereas there was something wrong in the womb, or in the peri-uterine tissues, in two-thirds of these women who died of various diseases other than sexual.

The atmospheric temperature being temperate, and the bodies having been kept about twenty-four hours, Dr. Liebman introduced one of the well-known sounds, just as he would have done in the living body, with the exception that he made no previous digital examination. In twenty-three instances, of which twenty-one were multiparous, he so easily transfixed the womb that "he was unable to feel at what moment the sound left the uterine cavity," and the womb was perfectly healthy in only seven of these twenty-seven cases. In forty-two cases the perforation was easily made, that is, by gentle pressure or slight leverage, and in these forty-two cases, the womb and its surroundings could only be considered normal in eight. In eleven instances a moderate amount of force was required to pierce the womb, and it was difficult to do so in twenty-four cases, that is, Dr. Liebman only succeeded "after repeated attempts, and with a sufficient exertion of strength to bend Sims' sound into manifold curves, or after changing it for a more powerful instrument." In thirteen out of these twenty-four cases there was nothing wrong in the womb.

With regard to the kind of uterine disease found when the womb had been *facillime* pierced, in one woman, who died of consumption, and who had been delivered two months before death, the uterine walls were thick and friable, and their cavity somewhat dilated; in another, there was chronic ovaritis and perimetritis; in another, the womb was small and pluriparous, the cervix contained mucous polypi, and two small sub-peritoneal fibroids grew from the fundus. In two cases the uteri were hypertrophied, their tissues being pale, soft, and friable. The womb was atrophied in a consumptive patient, aged thirty, and infantile in another. In nineteen out of these twenty-three cases, the fundus was always pierced at a short distance from, and posterior to the insertion of the right oviduct. In three cases the posterior wall was pierced, once the

womb was stuck fast in false membranes, the product of puerperal peritonitis, and twice it was anteflexed by old adhesions. Once the anterior wall was pierced, the womb being firmly retroflexed by numerous adhesions. Of the thirty-four women whose wombs were *facile* pierced, thirty-one were pluriparous, and presented clear evidence of chronic catarrh, flexions, cervical hypertrophy, chronic pelvi-peritonitis, and there were fibroid growths in six instances. The sound was found to have perforated the fundus in thirty-one out of the thirty-four cases, not far from one of the oviducts, and nearer the posterior than the anterior wall; but once the anterior wall was pierced, because the womb was retroflexed and little movable. In ten cases the posterior wall was pierced, the uteri being anteflexed, and in three instances completely fixed by numerous pelvic adhesions. In one case the posterior wall was pierced, the point of the sound being deviated by an intrauterine polypus; in another, by a fibroid, and in a third by cystic disease of the inner womb. Chronic metritis and a remarkable state of hypertrophy of the uterine walls accounted for the difficulty of piercing the womb in some of the twenty-four cases.

These interesting experiments confirm my assertion, as to the danger of perforating the womb for some months after parturition. They show that whatever limits the free movements of a healthy womb, makes it more liable to be pierced by the sound, that this should be thought of, when there are uterine fibroids, and that it would be well never to attempt to re-dress a flexed womb by the uterine sound, without having previously ascertained, by both digital and bi-manual examination, that it is really possible to do so.

As a rule, the speculum would be in the way when the uterine sound is to be used, and the patient being placed on her back at the edge of a hard bed or sofa, the index of the left hand placed in the vagina reconnoitres the womb, fixes the cervix, and helps to guide the previously warmed sound into the cervical canal. The surgeon holds it in his right hand and introduces it into the vagina, with its concavity turned upward or backward, according as the fundus uteri be anteverted or retroverted. Gentle and steady pressure overcomes the contraction of the internal os, which of itself shows that there is not much amiss with the body of the womb, for all chronic diseases relax this inner opening. The left index finger should continue to support the womb, and when the sound is withdrawn, the tip of the finger should remain in close contact with the sound, at the os uteri, to show the length of the womb. By means of the uterine sound, we can thus measure the length of the cervix, the calibre of its canal, and the seat and character of any stricture that may be present; we can also estimate the capacity of the uterine cavity, for the fact of its being much larger than usual suggests its distention by fibroids or as a result of defective involution, while the direction assumed

by the instrument enables one to distinguish ovarian from uterine tumors, and to make out to what extent the womb forms part of any large abdominal growth.

The most suitable time for the use of the sound is a few days after a menstrual period, because the os internum is then more open, and there is no chance of a miscarriage.

When the sound is used to rectify the shape or position of the womb, this should not be attempted by boring with the point of the instrument, but by acting on the whole of that part of the sound that has been inserted into the womb; the right hand should be used for this purpose, while to act in concert with it, the left hand will be either placed above the pubis or in the vagina, or in the rectum, to direct the womb into its right shape or place.

In civil practice, it is better to make an examination of this kind in the patient's bedroom, and to recommend rest on the sofa for that day. A warm hip-bath, or a large hot linseed-meal poultice, sprinkled with laudanum, should be ordered if the introduction of the sound has been followed by much pain, and an opium suppository might be required. The uterine sound may be constructed as a hollow tube, and by it a sample of the contents of the inner womb may be obtained unmixed with the cervical secretions, while through this tube the womb can be injected, as will be soon stated.

Wax Bougies.—It is right to use the sound to ascertain if a pelvic tumor be uterine, or how much of a pelvic tumor is uterine, or to rectify a false position of the womb, but I think it unwarrantable to use it merely to investigate the state of the internal cavity of the womb. This can be done, as well if not better, by means of a wax bougie, and a practitioner should have at hand a dozen of them of different sizes. With wax bougies the surgeon can scarcely do harm, for if they cannot pass the stricture, they bend and are expelled, whereas, the uterine sound is a dangerous weapon in inexperienced hands. The wax bougie takes the outline of the internal uterus, showing the amount of flexion of the cervix on the body of the womb. The withdrawn bougie will also show the seat of the cervical stricture, and its amount is often demonstrated by the depth of the impression made by the cervical concentric rings.

After having ascertained the direction of the uterine axis by a digital examination, the speculum should be introduced, and then a medium size wax bougie, previously warmed and moulded according to the uterine curve. I have often been able to pass a bougie through a strictured cervix when I could not pass a sound of like calibre. A bougie takes the length of the cervix and of the body of the womb just as well as the sound; it gives the uterine curve, which the other does not; is much less liable to damage a patient; and it cannot perforate the womb; but, like the uterine sound, it has been known to bring on abortion.

Digital Examination of the Inner Womb.—The full dilatation of the cervical canal is both a mode of examination and a mode of treatment, and when I consider it as such, it will be shown that by sponge- or laminaria-tents, we can so enlarge the cervical canal that it will admit the index finger, and enable us to know for certain whether the internal surface of the body of the womb be ulcerated or otherwise diseased, whether polypi grow from its surface, or whether fibroids underlie the uterine lining membrane.

CHAPTER II.

UTERINE SURGERY.

It is not in my competence to write usefully of some operations, and to do so would be beyond the scope of this work, but I am bound to note, compare, and pass judgment on the several modes of intra-uterine treatment, that each claim to be the best. It is also right to take special notice of hysterotomy, which is too often resorted to for the cure of so many diseases of women, and of dilatation of the cervix, the indispensable preliminary of all intra-uterine surgery. Some remarks are due to the reader respecting the proper time for operating, anæsthesia in relation to uterine surgery, and the dangers attending it.

Time for Operating.—A few days before menstruation, the ovary is the centre of concentric blood-currents which distend the voluminous plexus of vessels in which the ovary is cushioned, congest the womb and make it bleed. After the flow has ceased, some days are still required for this ovarian blood tide "to ebb," as Dr. Storer puts it, so no operation should be performed on the sexual organs from a few days before the setting in of the menstrual flow till a few days after its subsidence. It has long been my plan, and Dr. H. Bennet's, to fix on the fifth or sixth day after menstruation for any serious uterine operation.

Sir James Paget admits the propriety of adopting this rule, although his own experience seems to show that its utility may have been exaggerated. "I have seen," says this eminent surgeon, "no mischief occur in the few cases in which, by oversight or by necessity, I have operated either directly before or during a menstrual period. The cases have not been many, but in none of them has any mischief ensued. Not unfrequently the occurrence of the first menstruation after an operation is attended with much more discomfort than the patient has commonly endured; and in those who are subject to menstrual distress, symptoms of general disturbance, enough to excite alarm, may be associated with it. The probability of the advent of menstruation is therefore always to be considered in the case of anomalous symptoms after operations. And it may be well to mention that, after operations on the genital organs, it is by no means rare for the next menstruation to occur some days earlier than in the ordinary course of events it would have done. As with menstruation, so, much more, during pregnancy I should not willingly

operate. And yet, with the exception of the danger of producing abortion, I know of no facts that would imply a greater than the average risk; and if we may suppose a similarity between patients pregnant and those recently parturient, we may believe them comparatively safe." The repair of a rent perineum is as good an example of the healing of a bruised and lacerated wound as we could well find, and Dr. Goodell looks out for such rents, and stitches them up immediately after parturition; and at a late meeting of the Obstetrical Society, no one contested Mr. Spencer Wells' questionable assertion, that it was a superstition to suppose that wounds would not heal as well in a pregnant woman as in any other.

Sir James Paget adds that "When women are suckling they will bear operations with no more than the common risk that might attach to persons who may be in comparatively feeble health. The mere presence of lactation seems to have no bearing on the matter. But an exception must be made, I believe, for operations on the breast. I never did one, and, if I can help it, never will; and to this conclusion I should have come, even if I had not read of a case of fatal hemorrhage from a breast, cut widely into, during lactation."

There can be no doubt respecting the propriety of deferring active surgical interference with the womb, by sponge-tents, pessaries, etc., until the subsidence of inflammation in that organ and its surrounding tissues has been ascertained by very careful examination. Half the accidents that occur depend upon the neglect of this precaution. Even leeches applied to the neck of the womb, after having previously relieved the patient, will, on another occasion, cause great pain or flooding. In a lady who was suffering from chronic internal metritis with pelviperitonitis, exquisite pain set in as soon as the leeches took, and I was obliged to remove them as quickly as possible. Another way of insuring the success of operations performed on any part of the sexual organs is to enforce complete rest during the week following the operation, if not for a longer period, however hearty the patient may feel.

Anæsthesia.—I do not think it right to make women unconscious in ordinary cases of vaginitis or cervicitis, even when the introduction of the speculum is painful and the patient young and unmarried; but in complicated cases of uterine disease, and when the patient is very sensitive to pain and emotion, instead of losing time in following out a guessed-at-treatment, it is far preferable to place her under full anæsthetic influence, so as to thoroughly study the case in order to gain a conviction of what may be the best mode of treatment. Whenever an anæsthetic is required it should be given by a competent man, who should have nothing else to attend to.

Operation Eventualities.—Pain, bleeding, inflammation, lymphangitis, peritonitis, are the main dangers; the three first have been amply

treated of in the chapter on sedatives, antiphlogistics, and hæmostatics, but a few words will not be amiss respecting the two other eventualities.

Lymphangitis.—Transparent and invisible to the naked eye, the lymphatics were the last discovered of the human vessels. They are still the least known, and their diseases have been confounded with those of the veins. The slightest cervical lesion may set up lymphangitis in congested pelvic organs, and when the ovaries have been long the seat of morbid action. The varied mode of action of lymphangitis in pelvic pathology as the result of pelvic surgery, has been elsewhere[1] condensed by me in the following propositions:

1. That pelvic cellulitis, benign or septic, originates in the lymph spaces, and in the capillary lymphatics that have been wounded in some lesion of the utero-vaginal mucous membrane.

2. That from the patch of capillary lymphangitis implicated in a mucous-membrane lesion, inflammation may spread to one or more of the nearest lymphatics, and may be benign or septic.

3. That one lymphatic may pass on inflammation to another, so that a continuous chain of purulent lymphatics may extend from the septogenetic lesion to the lumbar lymphatic glands, these acutely inflamed lymphatics often inflaming their surrounding cellular tissue, their glands, and proximate organs.

4. That wherever situated in the pelvis, cellulitis follows the same course, but varies in name and in symptomatology according to its topographical disposition, and to the organs and the tissues that circumscribe it.

5. That when lymphatic glands do not succeed in barring the progress of inflammation, they also inflame their surrounding cellular tissue, and may thus cause an internal bubo wherever there is a pelvic lymphatic gland.

6. That occasionally peri-uterine inflammation has no other origin than this frequent origin of abscess of the broad ligaments.

7. That purulent lymphatics on their way to the lumbar glands may inflame the subserous cellular tissue in the iliac region, and thus cause iliac abscess.

8. That the subserous lymphatics and the peritoneum are so intimately united by physical contact and physiological action, that it is almost impossible for subserous lymphangitis not to cause peritonitis.

9. That the subperitoneal lymphatics being continuous with and contiguous to those of the ovary and of the oviduct, they may be inflamed by subserous lymphangitis, particularly when it is septic.

10. That the contamination of the blood by lymphatic pus, leads to

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[1] Lymphangitis in Pelvic Pathology. Transactions of the Obstetrical Society of London, vol. xvi.

the inflammation of those parts that are in physiological connection with the lymphatic system, such as the serous and synovial membranes and the spleen, whilst phlebitis more frequently causes metastatic abscesses, if it be not their sole cause.

11. That though often overlooked in *post-mortem* investigations, sporadic puerperal lymphangitis is not uncommon, but is more frequently found in connection with, but eclipsed by, phlebitis.

12. That the worst cases of puerperal lymphangitis have their modified counterpart and their subdued presentment in non-puerperal pelvic pathology, and that more frequently than is admitted, lymphangitis causes speedy death after uterine operations.

13. That whether women be poisoned by puerperal phlebitis or puerperal lymphangitis, the general symptoms are the same in nature and in intensity, and that the local symptoms vary according to the amount and to the variety of its primary and of its secondary lesions.

14. That the increase in size and in number of pelvic lymphatics during pregnancy, and their increased functional activity, strongly support the rule not to operate on pregnant women.

15. That as the liability to puerperal lymphangitis is in direct proportion to the number and to the gravity of lesions inflicted on the utero-vaginal mucous membrane by tedious labors, it is advisable to shorten labor by the use of the forceps, according to the tendency of modern practice.

16. That the bathing of a puerperal wound in an ichorous discharge is so dangerous, that disinfecting vaginal injections should be made as soon as the lochial discharge becomes in the least offensive.

17. That the innocuity of injecting a solution of tincture of iodine into the womb immediately after delivery, and of a solution of perchloride of iron very soon afterward, warrants the injunction to inject into the womb some strong disinfecting substance whenever the lochial discharge is fetid.

Peritonitis.—The Nemesis of meddlesome pelvic surgery, fatal when acute and general; is the very frequent source of life-long mischief when, as pelvi-peritonitis, it displaces organs, or misshapes them, or limits their proper freedom of action. The liability to pelvi-peritonitis is increased by the slitting the womb up to the os internum, by the leaving a stem in a womb that rebels against it, by the bruising of the uterine periphery by misfitting machines, and by the unrecognition of *post-partum* disease of the womb until it has floored a patient.

Cervical Dilatation.—In the healthy womb the os internum is closed, except just before and after menstruation, and the uterine sphincter often contracts spasmodically from disordered innervation during menstruation, and from the irritation of a foreign body, such as a blood-clot, trying to come out of, or an instrument forcing its way into, the

womb; hence it is clear to me that cervical stricture may be spasmodic, and that Simpson and his disciples have very frequently slit up the womb to cure a stricture they themselves produced by roughly using a cold sound to the cervical canal. Those who think a wide passage necessary for the free exit of the menstrual flow, forget that many men of experience have, like me, known women to menstruate easily through an almost imperceptible opening, and that when there is great pain in attendance on cases of cervical stricture, an opium suppository often calms it, and lets pass the retained flow.

The use of a wax bougie, properly bent, warmed, and oiled, would have saved many a distinguished man from committing the unpardonable absurdity of treating spasmodic cervical stricture by slitting up the cervix.

Just as urethral stricture is cured by *gradual* dilatation, so may be cervical stricture, which may possibly find in *forcible* dilatation a more powerful solvent—a solvent now used to cure spasms of the vagina, of the anus, and of the neck of the bladder.

Extensive dilatation of the cervical canal, useless for the cure of dysmenorrhœa, except it be exfoliative, is absolutely necessary for the safe treatment and for the effectual cure of various kinds of internal metritis. This full dilatation freely drains the enlarged womb of its noxious secretions, and allows a speedy exit of the surplus of whatever medicated fluid has been used. I have elsewhere [1] clearly shown that this is the *sine quâ non* of all surgical interference with the body of the womb, and since then it has been stated that on the same principle the quick and full dilatation of the neck of the bladder will quickly cure in woman cystitis and strangury that have lasted for years.

Moderate and Gradual Dilatation.—In the first place the patient should be carefully examined in full daylight, to be sure there is nothing amiss about her pelvic organs. After introducing the speculum, I pass a bougie into the cervical canal; if a small one be very tightly held, I cut away part of it, and the next day I remove the part left in the cervix, if it has not been already expelled. I then take a small sponge-tent, and rub it well with sand-paper to prevent it slipping out of the cervical canal. I then fix the tent on the bent extremity of a stilet, and introduce it into the cervical canal so as to place it out of view, for if it be left only half introduced it would soon fall out and be of no use. On attempting to insert the sponge-tent, the womb frequently shrinks from manipulation, then one or the other lip of the womb should be seized and held fast with the uterine tenaculum until the tent has been introduced. The slow dilatation of the sponge, under the influence of capillary expansion, overcomes the resistance of the cervix, and effectually dilates the

[1] Uterine and Ovarian Inflammation, 3d edition.

canal in which it is introduced, without much irritating the mucous membrane. The sponge should be allowed to remain for twenty-four hours; the expansion of the sponge is usually unattended by pain, but sometimes the patient suffers slightly, or feels as if something were being forcibly passed through the womb. If the sponge be allowed to remain more than twenty-four hours, it is generally expelled by uterine contraction into the vagina. If, however, it be introduced very far into the cervical canal, so as to admit of the os closing over it, it may be retained and require extracting, especially if the string break, as sometimes happens. When the os uteri is much narrowed, and very small tents are introduced, the use of a speculum is indispensable, as the warmth of the vagina softens the tent or its points before it can be passed into the os. The first tent will probably only pass a quarter or half an inch; but each time a new tent is inserted it penetrates further, until the entire cervical canal has been dilated. When the os is more open, and a larger tent can be employed, the speculum is not required, as the tent can then be easily introduced with the assistance of the director or of a stilet, the patient lying on her left side. As I only introduce the tent every third or fourth day, in order to prevent too much irritation, the interval between two menstrual periods is generally required to thoroughly dilate the canal. The day the tent is withdrawn, as there is generally a certain amount of mucous discharge, I recommend a tepid-water injection into the vagina to allay irritation. When the os and cervical canal have been thus distended by the tent, after its removal injections should be used at first with great care, for I have known uterine colics occur, apparently from the injected fluid penetrating into the open os. Thus used, sponge-tents do not often force their way through the os internum, which may dilate nevertheless. It is different in this respect with the sea-tangle tents, which have a greater tendency to slip out of the cervix, unless they are grasped by the whole length of the cervical walls. In that case the internal sphincter checks the swelling of the sea-tangle, and the head above the sphincter has to be got through it, out of the womb, as a cork is to be coaxed out of the narrow neck of a bottle. Laminaria-tents are less liable to cause a fetid discharge than sponge-tents.

By thus progressing carefully, ascertaining occasionally the state of the parts by very careful examination, and suspending the dilatation if it produces much irritation of the mucous surface, the cervical canal may be efficiently dilated. The only bad results that I have observed to be caused by the gradual dilatation of the cervix, are uneasiness, uterine pains, congestion of the uterine lips, an increase of mucous discharge, sometimes fetid, a little loss of blood, and the advance of the menstrual period. I have seen no other evil results follow this mode of dilatation, neither has Dr. H. Bennet, although during the last thirty years we have often introduced six or eight tents in the course of three weeks. I suppose this

depends on our having been very careful in the selection of our cases, and on our never thinking of introducing a tent without having previously ascertained, by careful examination, that the cervix was in a fit state to receive it. I submit, with due deference, that those who do not follow this course, and who apply tents while fumbling under the bed-clothes, need not be surprised if they meet with accidents. It is the penalty they deserve for working in the dark. It is only by supposing an oversight of some pathological condition that I can understand Dr. M. Sims having thrice seen metro-peritonitis follow the gradual dilatation of the cervix for the relief of uterine stricture. I do not think a case related to the Obstetrical Society of Philadelphia by Dr. Lenox Hodge, in which the patient was carried off by peritonitis four days after the introduction of the third tent, was a fit case, for a double ovarian tumor was found on opening the body. In the case Dr. Willard brought to the knowledge of the same society, there was found an abscess containing an ounce and a half of pus on the left side of the womb, and peritonitis, but he owns, that although the sponge-tent had given great pain when he removed it, he nevertheless inserted another, and that the next day the woman was working at a sewing-machine. In Dr. Ellwood Wilson's case, the patient being desirous of becoming pregnant, and suffering from painful menstruation, and malformation of the neck of the uterus, he introduced a sponge-tent on a Thursday, and another on Saturday morning, which was left in until Sunday morning. The patient seemed so well that he gave her permission to go down-stairs; she not only did this, but in the evening went to church. In the night she had a chill, on Monday peritonitis set in, and on Tuesday she died.

It appears that Simpson lost a patient from the use of a laminaria-tent, and Dr. Meadows has met with another case in which severe pain in the left hip-joint followed the dilatation of the womb by the tangle-tent. On *post-mortem* examination it was found that a large abscess had destroyed the hip-joint, but there were no signs of disease in or around the sexual organs. These cases show that when a tent has been introduced, the patient should keep the house; that it should be withdrawn when very painful; and that pyæmia may rapidly set in whenever a mucous membrane is abraded. A sponge-tent has been known to perforate the wall of the cervix, rendering it imperative, for the removal of the foreign body, to slit the cervix up to the point of perforation. To understand the possibility of such an accident, it is necessary to admit unusual softening of the cervical tissues, and want of skill on the part of the operator. Dr. Mathews Duncan is afraid of setting up cellulitis by the use of tents when the general health is deteriorated, and he has returned to the use of the metallic bougie for the treatment of spasmodic dysmenorrhœa, as first suggested by Dr. Macintosh, and he says he thoroughly cures his patient by once passing the bougie through the cervical canal.

This is evidently worth trying, although in America, where dilatation of the cervix by graduated metallic bougies is extensively practised, serious and even fatal consequences are not uncommon; nor can that be a matter of wonder, when it is borne in mind that a rigid unyielding muscle is forcibly expanded in a few moments. That rupture of some of the muscular fibres may take place, we may assume as probable; and that the peritoneal covering of the uterus is injured in some cases seems certain, for Dr. Thomas, of New York, has published the particulars of a case in which the introduction of three of Peaslee's dilators was followed by fatal peritonitis.

When a mechanical stricture really does exist, after having sufficiently dilated by the process I have described, it is well to retain the ground gained by leaving in the cervix one of Simpson's bulb-headed dilators; one slightly bulging at its uterine end, and with a very small bulb, will stand the best chance of remaining in the cervix. If the vulva is relaxed and open, nothing is easier than to introduce the instrument and to guide its extremity to the os uteri; if, on the contrary, as is very often the case, the vulva is small and the vagina very contracted, it is difficult, even with the assistance of the finger and of the director, which holds the bulb. The root of gentian, and tupelow wood, admit of being cut into appropriate form, and do well as dilating agents; ivory softened by chemical agency is likewise used in France, and in twenty-four hours it swells to double its size.

Extensive Dilatation of Cervix.—In cases of dangerous intra-uterine disease, generally associated with flooding, it is necessary to largely dilate the cervical canal. The passage is then already dilated, so the introduction of a large tent is not difficult, and when it has remained ten hours it should be replaced by another, to be retained the same time, and on withdrawing it the finger can pass into the womb. To withdraw it, Dr. M. Sims recommends us to "place the patient on the side, as for its introduction; apply the speculum, and immediately we shall see the sponge projecting from the cervix, and considerably dilated. It will be saturated with a fetid, serous, or sero-sanguinolent discharge, which is to be carefully wiped away. After this, fix a pair of spring forceps firmly on the centre of the sponge, for the purpose of removing it. Then let the patient turn over on her back, with the forceps still fastened to the sponge. Now pass the left index finger into the vagina, along the locked blades of the forceps, till it comes in contact with the sponge. The sponge is not to be suddenly and quickly withdrawn, but is to be pulled gently, first to one side and then to the other, taking care at the same time to support the uterus with the index finger, which is to be gently carried into the cervix by the side of the tent, first on one side and then on the other, to free its meshes or interstices from the cervical mucous membrane which interlocks, as it were, with the substance of the sponge. When

the sponge has been well loosened all around, and is found to slip down a little, then he should be ready to thrust the finger up into the cavity of the womb, as he pulls it away. If the finger does not pass at once and easily, it is better not to use much force, but, as before stated, to wait for another opportunity. The removal of the sponge is always followed by more or less flow of red blood, showing a laceration of tissue. The sponge may pass the os externum with tolerable ease, and still not be able to pass the internum, and here it is better to procrastinate a complete exploration than to use an undue degree of force. But if the second joint of the index pass the os externum, the point of the finger is already in the cavity of the uterus; and then, while he presses the finger onward and upward, he should make a counter-pressure with the right hand just above the pubes, grasping the fundus of the uterus through the parietes of the abdomen, and forcing it down on the end of the left index, as he would push a thimble down on it. Were it not for this outward counter-pressure, the uterus would necessarily be pushed upward before the index, and we should seldom reach the fundus. There are good reasons for placing the patient on the side, and using the speculum for inspecting the sponge before its removal." Dr. M. Sims then specially warns the surgeon against the temptation to remove the sponge while the patient is on her side. "1st. Because if the sponge be removed under these circumstances, with the vagina widely open, the air rushes into the cavity of the uterus, and I am sure that in my early experience I had the misfortune more than once to see metritis follow this accident. 2d. Because the finger cannot be passed far enough into the uterine cavity for a thorough exploration unless the external counter-pressure be made with the other hand, which is neither easy nor effectual in any other position than the dorsal."

I am not aware of any deaths having followed this mode of dilatation, but as it is generally adopted as a preliminary to some serious surgical process, death would be placed to that score.

There is another mode of speedily effecting the full dilatation of the cervical canal, introduced by Dr. George Gibbs, and adopted by the profession in Dublin; it is to introduce a sea-tangle bougie in the usual way, and soon afterward another, or several others alongside of it. Instead of the usual tents, it is best to use the compressed sea-tangle bougies; they can be cut to any desired length, and that length should be the depth of the uterus, as previously ascertained by the use of the sound. The number of pieces introduced must vary considerably. If the cervix be rigid, three or four will be as many as can be safely inserted; but if it be relaxed, double, or even treble, that number may be with impunity inserted. If the smaller number be used, they should be withdrawn after a lapse of a few hours and a larger number inserted; but in any case the os internum must be dilated to a size sufficient to admit of the passage of the top of

the index finger. To effect this is by no means easy. The first step, after having withdrawn the sea-tangle, is to seize the anterior lip with a volsellum, and with it to drop the uterus well down. This should be done by an assistant; pressure should also at the same time be made on the fundus; by these means the uterus will have been brought so low that, unless the pelvis be very deep, the point of the finger will reach the very fundus, and we are enabled to discover the presence of even a small polypus, should it exist, or to detect the so-called "granular" condition of the mucous membrane; a condition which communicates a sensation of roughness to the finger, and which is the early stage of those "fongosités" long ago recognized by Récamier as a not unfrequent cause of metrorrhagia.

Instantaneous Dilatation.—Says America, with accustomed audacity, this gradual dilating is slow work; take this instrument shaped like a lithotrite, wriggle it into the cervix, and then open the blades; what matters if the circular fibres of the cervix do give an audible crack? is not the woman under chloroform? Were it only a question of making a wide highway through the womb, the Dublin method being sufficient I would not notice the American idea, but it is affirmed that this tearing asunder of interstitial fibres sets up a considerable amount of adhesive inflammation in the cervical walls, and enables the cervix to support the body of a distorted womb, instead of bending under its weight. It is for the younger gynecologists to see how far this may be true; I mean those who are rightly not afraid of inflicting suffering that gives fair promise of cure.

I believe it was Dr. Ellwood Wilson, of New York, who thus sought to cure cervical spasm by the induction of temporary paralysis of the circular fibres of the cervix, just as we cure rectal spasm and vaginismus by forcible dilatation of the rectum and of the vagina. Dr. Wilson's dilator is much more powerful than the instruments sold here as uterine dilators. Dr. Goodell[1] describes it "as like the speculum forceps, with blades shaped like the former, but very much stronger, and so constructed that they diverge as the handles approximate. By the aid of the tenaculum or of the volsella, applied through a speculum, the anterior lip of the cervix is seized, and the dilator is introduced as far as it will go. Upon gently stretching open that portion of the canal it occupies, the stricture above so yields that, when the instrument is closed, it can be made to pass up higher. Thus, by repetitions of this manœuvre little by little, in fifteen minutes' time a cervical canal is tunnelled out which previously could not admit the finest probe. As soon as the cavity of the womb is gained, the blades are withdrawn far enough to lodge their tips just above the internal os, and their handles are then brought firmly to-

[1] Some Practical Hints for the Treatment and the Prevention of Diseases of Women. James A. Moore, Philadelphia.

gether. For ordinary purposes I have found a more delicate instrument sufficiently strong, while it has the merit of requiring no previous dilatation of the canal by tents, and the further merit of preparing the way for the admission of a larger instrument when needed. This operation is a painful one, and may demand the use of ether, but I have very generally done it without. Some of the constrictor fibres are ruptured, sometimes audibly, and a few drops of blood may trickle out of the os. The woman will complain of soreness for one or two days; beyond that I have not seen any bad results. In operating with either instrument care should be taken to keep the blades from slipping up so far into the uterine cavity as to press upon the fundus; otherwise great mischief might result. To prevent this danger, I am not sure but these instruments would not be the better for shorter blades, say two inches long at the most, or for a broad shoulder placed at that distance from the tip."

"After such a forcible dilatation, the cervical canal does not usually return to its previously angular or contracted condition. Since lateral extension of elastic bodies antagonizes their length, the cervix shortens and widens; and the plasma, provisionally thrown out by the submucous lesions sustained by the dilated part, serves still further to thicken and stiffen its tissues. In other words, the stem-like neck of the pear-shaped womb is shortened, widened, strengthened, and straightened. Hence for straightening out anteflexed or retroflexed wombs, and for dilating and shortening the canal in cases of sterility or of dysmenorrhœa arising from stenosis or from a conical cervix, the dilator will be found to be a most efficient instrument. In its results it is not infallible, but by it I have, at one sitting, cured cases of long-standing dysmenorrhœa, and relieved absolutely all the distressing symptoms of several very obstinate cases of anteflexion, and thus far of every stubborn case of retroflexion."

Hysterotomy.—The tediousness of the process of dilatation, the difficulty of doing it well, and its inutility in a certain number of cases, has caused the slitting up of the cervix to be preferred by many. It would be useless to say much of Simpson's hysterotome, or of the other double-bladed implements invented to cut through the os internum and its circular arteries. There is a strange elasticity about conscience, so it need not surprise us that while Simpson blazoned his successful cases of hysterotomy, he buried the remembrance of his fatal cases alongside of their mortal remains. It was inevitable that the routine use of the hysterotome should lead occasionally to death by flooding and to many serious pelvic diseases, so I am quite prepared to believe the statement of Dr. Mathews Duncan, that the number of women Simpson enabled to bear children was small compared to the number of those he made permanently sterile. The husband of Mrs. L., having large property and no children, though several years married, took her to Edinburgh, to be operated upon by Simpson. She had no flooding, but pelvic inflammation set in so

severely, that he sat up with her several nights, giving a grain of opium every hour, and she was for months under his care for cellulitis. She had three severe attacks of the same kind during the following three years, and a fourth, when in town, under the care of Dr. H. Bennet, who afterward treated her for cervical inflammation and stricture. It was four years after the operation when I saw her, and according to her account, she had never had a day's illness till Simpson operated, nor a day's health ever since. There was chronic inflammation of the womb, with perimetritis, swelling and throbbing on the right side of the womb.

Had it been the practice of surgeons to cure stricture by the bilateral division of the penis up to the point of stricture, I could understand Dr. Marion Sims proposing the bilateral division of the cervix up to its vaginal attachments to cure cervical stricture, but that he should have brought himself to believe that the same operation would cure most of the more formidable diseases of the womb, shows the danger of being led away by one idea. It is well for the numerous gynecologists who still follow the teaching of this ingenious surgeon, to bear in mind that Dr. Peaslee, the leading gynecologist in America, frequently found Dr. M. Sims' operation lead to flooding, cellulitis, septic peritonitis, and to sterility. When we analyze the possible results of dividing the cervix, there will be: 1st. The deep draining of the uterine tissues, which will be useful if they be congested and hypertrophied. 2d. The division of the circular fibres of the womb will solve all spasmodic action on their part, and lead to the shortening, broadening of the cervix. 3d. The shape of the womb cannot be altered and its size diminished without somewhat altering the connections of the womb, which would explain the reported utility of the operation in certain cases of uterine flexions. 4th. It may modify the innervation of the womb, as does the section of the nerve in brow-ague, which might make it useful when the pain attending hypertrophy and displacements is very distressing, and cannot be otherwise quelled. Hysterotomy is allowable when it is difficult to introduce a No. 1 or 2 bougie, and when the vaginal extremity of the cervix has a conical shape; for, in that case, it is obviously difficult for the semen to enter the womb, even if there be no stricture. Moreover, I see no use in attempting to dilate tissues that have the consistency of gristle, and I prefer dividing them, if I find that the cervix does not yield kindly to the means of dilatation.

Mode of Operation.—This must be governed by the seat of the stricture. On this point pathologists are at variance, and I am myself undecided as to the degree of frequency of stricture at the os internum or externum, but when the cervix is acuminated, the stricture is generally found near the os externum. In these cases I introduce a large speculum, seize the cervix with the hook, and divide it right and left with the scissors, about three-fourths of an inch. I permit it to bleed freely for

ten minutes, and then check it with the perchloride of iron. If the stricture be higher up, I incise the stricture tissues, layer by layer, right and left, and wait a few minutes before attempting to stop the bleeding. It is better to perform hysterotomy with scissors and bistoury in broad daylight, with the full knowledge of what one is doing, rather than to work in the dark, with more or less complicated instruments. The introduction of a solid tent immediately after the operation, as part of the dressing, has repeatedly set up inflammation, and plugging with an oiled rag is preferable. Of course I keep the patient in bed, examine her two days after the operation, and I pass a large bougie through the cervical canal to prevent adhesive inflammation of the wounded tissues; for the tendency of the uterine tissues to heal by first intention is so great, that many of these operations are of little use, because the division is not followed up by dilatation. I am in the habit of passing a bougie every second day, and about the eighth or tenth day after the operation I leave a tangle-tent in the passage, or one of Simpson's bulb-headed dilators. Dr. Peaslee thinks that hysterotomy ought to strictly resemble that simple division of the mucous membrane by which surgeons cure ulcer of the rectum. He states having cured five hundred women of a host of infirmities by an incision, limited to the lining membrane of the cervix. I do not see how he can so limit his incision, and, when really wanted, a deeper incision is required.

Intra-uterine Surgery.—None but thoroughly experienced practitioners should venture on the surgical treatment of the internal surface of the body of the womb, but all may often cure internal metritis by perfectly curing the cervix. This was Dr. H. Bennet's practice, it is mine, and it is, in reality, the practice of all whose intra-uterine treatment only consists of passing a probang charged with some medicated fluid, or a thin wire wrapped round with a thin coat of cotton-wool soaked in some medicated fluid, through an undilated cervix. When the cervix has squeezed the medicated fluid out of the probang and coated it with mucus, there is precious little left for the cavity of the womb. What these gentlemen unconsciously do by such treatment, is to radically cure the cervix, and in bad cases they had better adopt Dr. Athill's suggestion, to previously dilate the cervix by a couple of sea-tangle bougies, so that the whole of the diseased lining membrane of the cervix may get its due share of such strong agent as they have faith in. If they do this, there will be little need of intra-uterine surgery, properly so-called. What I mean by intra-uterine surgery, is the injecting of fluids into the cavity of the womb, or the swabbing of it with some strong agent, or the leaving a solid substance to melt in it, or the removal of morbid growths from its surface, and nothing of this kind should be attempted without the cervix having been fully dilated, as already stated.

Intra-uterine Injections.—I believe all the deaths caused by intra-

uterine injections occurred before the recognition of the importance of full cervical dilatation, and before it was known how to do this effectually and speedily. The mere distention of the womb may have an extraordinary aggravating effect, for women have died from the injection of tepid water into the womb. I am not aware that death has ever followed intra-uterine injection, when the cervix had been sufficiently dilated to admit the finger, so I do not like to completely condemn intra-uterine injections, and I would rather suggest their being cautiously tried in some of our hospitals.

A one-ounce india-rubber bottle, with a pointed nozzle fitting tightly into the end of a female catheter, or into a hollow silver uterine sound, are all the instruments required for this operation. The bottle is charged by suction, the fluid should be gently injected, and then the tube should be withdrawn and a two-grain opium suppository passed into the rectum. I have in this way injected the tincture of subsulphate of iron, diluted with its volume of water, to check flooding; this has caused nausea, great pain, or intense prostration for some hours, but no more serious accidents. I have in like manner injected tincture of iodine, more or less diluted, in cases of pseudo-membranous dysmenorrhœa; once it caused acute metritis, from which the patient made a good recovery. Tincture of iodine is the safest thing to inject, even to check *post-partum* metrorrhagia. The blood coagulated by the tincture of iron may irritate, as a foreign body, or cause septicæmia by its decomposition in the womb, whereas iodine is a well-known antiseptic. I cannot tax my memory with an untoward result due to the surgical use of tincture of iodine; but Dr. Thomas mentions its having been followed by death.

Dr. West found that intra-uterine injections of an infusion of matico stopped flooding in a woman of fifty-one, after all other means had failed. Dr. Swayne, of Clifton, has found it useful in metrorrhagia, not arising from polypus or malignant disease; and chromic acid, in the proportion of fifteen grains to a drachm of water, has been praised by American surgeons.

In most of the fatal cases of intra-uterine injection, a solution of nitrate of silver was used, but Professor Pajot, of Paris, claims to have minimized the dangers attending it, by using a syringe the size of the little finger; he puts into it as much of a solution of nitrate of silver as will fill a thimble, and fixes to the syringe a very slender, long, and curved canula, which moves freely in the cervix. A wooded speculum filled with water is used; and it is stated that by these means the injection has no disagreeable consequences. It is generally thought that in the fatal cases of intra-uterine injection, the substance injected has passed through the oviduct to the peritoneum. This has occurred in a very few well-known instances, but the frequency of the occurrence is greatly exaggerated, and there are practitioners who resort to this explanation, even when pain fol-

lows the administration of an ordinary vaginal injection. The cause of death is easily found, for intra-uterine injections are never made unless the womb and its surrounding tissues have been seriously diseased for a very long time, and the sudden aggravation of internal uterine disease sets ablaze ovarian and peritoneal disturbance that had long lain dormant —a spark is all that is wanted to explode a powder-magazine !

Introduction of Solid Substances.—Till our rising gynecologists leave off devising new hysterotomes, or new mechanisms to bolster up the womb at its expense and at that of neighboring organs, and find time to settle this question of intra-uterine injections, among other moot points of uterine surgery, it is perhaps safest to deposit some solid substance into the cavity of the womb when we do not think it susceptible of being otherwise cured. To do so, is to return to the practice of the father of all our modern gynecology, for Récamier introduced the solid nitrate of silver into the body of the womb, by means of Lallemande's porte-caustique. It is better to use Simpson's, and to leave from five to ten grains of the lunar stick to dissolve, provided the cervix be fully dilated; and when the supply of nitrate of silver is exhausted I shall be happy to use sulphate of zinc in a similar way. If this can be easily done, what is the use of an instrument to blow powdered nitrate of silver, or any other commendable dust, into the cavity of the womb ? What we have to do is disagreeable enough, without blowing into our patient's wombs.

Intra-uterine Swabbing.—What is to be said on this head principally relates to the use of fuming nitric acid, as recommended by an excellent pathologist, Dr. Athill, and it will be found in the chapter on Caustics.

CHAPTER III.

UTERINE DIETETICS AND HOME-TREATMENT.

By home-treatment of the diseases of women, I mean hygiene, nursing, and the use of those minor surgical remedies which are so important, that, when well carried out, they cure most of the complaints that women are specially subject to; and unless these measures are well carried out, tonics and local treatment are only partially useful. This regimen comprehends so many observances and restrictions, that it is not surprising that patients neglect them, more or less, as soon as the pain abates; for on the disappearance of pain, the most sensible women believe that a hidden complaint is cured. When told that there still remains considerable enlargement and congestion of the womb, and that the slumbering disease will soon wake up if precautions be neglected, they are incredulous, neglect advice, and meet with relapses.

Home is most conducive to the recovery of chronic uterine diseases; and although it is sometimes advisable that a lady should leave for a time household duties and half a dozen children, to have advice, treatment, and rest for six weeks in London lodgings, "there is no place like home" is as true in medicine as in song. I have frequently seen the good effects of treatment interfered with by the worry and fatigue of hunting for lodgings, or of changing them. It is still worse for invalids to go on a visit to friends, for they cannot then do as they like, or fancy they cannot, which is almost as bad, and then they over-exert themselves and neglect treatment. It is very natural for those who are left lonely, to regret that they have no fond mother or sister to nurse them, but they might be still worse off with injudicious relations. Some mothers, who through life have been blessed with uniform good health, are annoyed at their daughters suffering from internal complaints, look upon it as a kind of personal affront, and object to their resting the feet and taking other precautions, as things never thought of in their younger days. The indiscretion of friends is proverbial; those who would scruple to direct you to find a street, unless they knew it well, will have no hesitation in unsettling a patient's peace of mind by the more or less strenuous advocacy of exercise, of stimulants, of some medicine that did good to somebody else, and change of air or of doctors.

Invalids should get up quietly, after breakfasting in bed. This effects

a very important saving of strength at a time of the day when the system is weakest, and it is in the afternoon they should do whatever most tries their strength, for that is the time of the day when they can best bear fatigue. Stairs should be avoided as much as possible, for Professor Haughton has shown that it is as fatiguing to ascend one foot perpendicularly as to walk twenty on level ground.

For this reason, when an invalid begins to drive or walk she should do so after lunch, and go to church in the afternoon. To supplement exercise, shampooing the body, or at least systematic friction of the body and limbs, and more particularly the back, every morning, is a matter of importance. This should be done with a rough towel, and Cash's is the best. A quiet dinner party is about the first amusement to be allowed an invalid, where the dinner will not be too long, the chairs too stiff, and the company still stiffer. I said visiting is bad for invalids, but it is worse for them to have staying company, for the duties of an hostess imply bodily fatigue and a state of mental strain lest all should not be well done.

Rest and Exercise.—In acute affections of the womb, particularly if the peritoneum be at all compromised, patients instinctively lie down, and can only leave the bed for the sofa. Formerly those suffering from even a moderate amount of inflammation of the womb were kept in bed for months; a very objectionable plan, for protracted recumbency greatly reduces the heart's power, and therefore weakens the system. Moreover, want of fresh air and exercise impoverishes the blood, increases dyspepsia, constipation, and nervousness, and thus does more harm than good to the uterine disorder. It is always useful, and sufficient in most cases of disease of the womb, to rest on the sofa for two or three hours before or after the lunch or early dinner. The utility of the recumbent posture should be explained to the patient by exhibiting the diminished size of the veins of the hand when held up, compared to their more enlarged size on holding them down. Patients prefer resting on the sofa after a late dinner, but I make a point of this being done in the middle of the day, for it makes a break in its fatigues, relieves for a time the fulness of pelvic congestion, and thereby diminishes the backache and other symptoms. Those who suffer much from uterine disease, instinctively assume the American attitude of repose, in which the lower limbs are placed higher than the pelvis; and several patients of mine who have suffered much from complicated pelvic inflammation, have the bed made after this fashion.

Patients ought to be benefited by sleeping on their backs when anteversion is marked, and on the belly when retroversion is considerable, and although this does not always hold good, those should always be recommended to do so, after childbirth, who have previously suffered from anteversion or retroversion. Independently of uterine misplacements, it is well to recommend sleeping on the belly to those who suffer much at

night from pelvic and back pains, for I have sometimes known this to diminish pain, and I have been told by patients that they have instinctively adopted this position during sleep because it relieved pain, and that on waking they often still found themselves lying in that posture.

Exercise.—One of the first questions that a patient asks is, "Am I to walk?" Many have tried to walk off the back pains, others instinctively shrink from doing what increases pain, but are so pestered by relatives that they give in. The decision of the question may be generally based on the patient's sensations: if walking so increases pain that its excess does not abate soon after rest, it is a sign that she has walked too much. Moving about in a level suite of rooms should be the first step to recovery; the patient may soon do so, for five or ten minutes or longer, two or three times a day, but going up-hill or up-stairs will long continue to be a painful exertion. The systematic rubbing and shampooing of the limbs, back, and abdomen is the best substitute for exercise. Much may be done by passive exercise in chronic inflammatory affections. In summer the patient can be carried into the garden, and be left for hours in the warm sunshine; in colder weather a lounge in a Bath-chair or carriage may be managed. The carriage shakes a person less than a Bath-chair, for many complain of pain, not only when they are jolted over a rough road by an unsteady hand, but even when they pass over a pebble in a garden-walk. A Hansom cab is the least liable to increase the pelvic pains, so it is fortunate that fashion no longer forbids its use to ladies, and any one who has been jolted for half an hour in a villainously hung ordinary cab, will understand how this will aggravate pain. When expense is no object, it should be remembered there is much less shaking from two horses than from one, and the front seat of a carriage may be suspended on springs for the feet to rest on; but even then some patients suffer less from walking than from the easiest hung carriage. As a rule, horse-exercise is objectionable in all forms and stages of uterine inflammation; but if the patient will be content to go at a walking pace, riding will sometimes fatigue less than walking; and one patient, in whom inflammation of the womb was complicated by hysteralgia, could bear horse-exercise, while riding in a carriage increased her pain.

Dancing is out of the question, particularly round dances, and one of the worst cases of acute metritis that I have met with, occurred in a married lady, about thirty, after dancing fourteen round dances at a menstrual period. All instruments worked by foot-power should be forbidden to those who have a tendency to disease of the sexual organs, and I have often had to forbid the playing of the harmonium to clergymen's wives. Sewing-machines worked by the foot are equally objectionable, and the poor women who have to live by working sewing-machines with both feet, are said to be very liable to dysmenorrhœa, ovaritis, and

to chronic uterine disease. The strain on the pelvic organs induced by such instruments is such, that the women are obliged to leave off work at the menstrual periods. After this, it is scarcely necessary to say that whatever is forbidden at ordinary times should be forbidden a hundred-fold at menstrual periods, or chronic disease of the sexual organs will relapse into acute.

Railway Travelling.—Many who suffer even moderately from uterine inflammatory affections, feel an aggravation of pain from any sudden movement, from a jar, or a false step on going up or down-stairs, so it is not surprising that travelling should often very much increase the patient's sufferings. The worst effects of carriage-exercise were exhibited in a patient of mine, who had been confined to her bed for six years by chronic uterine inflammation and a succession of pelvic abscesses and many intercurrent complaints, when the repairs of the adjoining houses, and of that in which she dwelt, rendered it imperative to move her to other apartments, a quarter of a mile distant. The removal was made in an invalid carriage, the patient having been placed under the influence of chloroform. As soon as the carriage began to move, the patient arched her back to protect it from the jolting of the carriage, and was keenly conscious of pain, though of nothing else. This concussion of the spine was followed by great failure of power on the part of the heart, great pelvic pain from an abscess which opened into the vagina on the fifteenth day, inability to take food and stimulants, and an almost total absence of sleep, so as to endanger life for many weeks. I moved the patient as the best alternative, but, when much in the same state, this lady had been advised by two eminent physicians to go into the country or to the sea-side. I have known a long railway journey to bring on premature labor, miscarriage, and flooding in cases of cancer or of fibrous tumor. When recovering from a sharp attack of endo-metritis, a young married lady went to Ramsgate by an ordinary train. The railway succussion rendered her nearly senseless, from pain and exhaustion; she had a flooding that night and was worse for many months. Another lady had long suffered from internal metritis, and was just able to crawl about the room, when, contrary to my advice, she went by ordinary train to Wolverhampton; she was either fainting or in great pain during the whole journey, and was quite insensible when she was taken out of the carriage and carried home. In badly hung carriages, one often goes on pounding unevenly laid rails by a succession of up, down, and lateral concussions, which render railway travelling so much more trying than a carriage drive; the laminated state of the rails often showing how they have been hammered by the carriages. If the shaking in our railway carriages is bad, it is worse on many Continental railways.

It is asserted that these distressing sensations may be prevented by the use of an additional set of springs of india-rubber, so as to separate

the body of the carriage from the framework, with which it is usually in immediate contact.

Unfortunately it appears that this judicious arrangement is only to be found in some of the South Western Railway carriages. I advise a slow train to be taken when the journey is a short one, and a fast train if the journey is to be of long duration, and I lay great stress on an afternoon train. In the afternoon, and after lunch, a patient is at her best, and if she arrives late at her destination she can soon get to bed, and does not feel knocked up the next day; whereas if she had gone by an early train, she would have arrived exhausted at a comparatively early hour in the day, to be still more fatigued by long talks with half a dozen different people. I do not object to a patient travelling in an invalid carriage put on the line, provided the train be a slow one, but the oscillation is simply frightful by an express train. The death of a patient of mine, suffering from ascites and fever, was certainly accelerated by thus travelling from London to Matlock. If the line be easy, and on the broad gauge, the patient cannot do better than lie down as on a sofa; if the line be bad, it is better to sit upon a water-cushion, for every part of the carriage that is leaned against for support, replies by a more or less severe jar and concussion. Railway travelling should be avoided during the menstrual flow or its proximity, and even during the time when it ought to come, whatever may be the reason of its non-appearance.

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Diet.—When inflammation of mucous membranes has not a traumatic origin, it often seems to depend on some unhealthiness of the blood-plasma, and purulent secretion may be considered as a process set on foot to purify the blood, so, without neglecting the treatment of local diseases, the physician must not overlook the state of the blood in which they may take rise, and, in the absence of more precise indications, he must fall back on the recognized canons of hygiene. Chronic ulcers of the legs often reflect the regimen of the patient, and will not heal if the supply of food be insufficient or indigestible; the same holds good with uterine ulcers. In other words, blood-distemperatures keep alive inflammation, and, as Dr. Addison has said, if keeping peas in a sore protracts granulation and discharge, so does a perseverance in unwholesome articles of food. It must also be remembered that over-feeding interferes with the good progress of inflammatory exudation, and the surgeon finds that a quick, full pulse checks that cicatrization of external wounds which is promoted by quiet circulation. Those who consult me for inflammation of the womb, are frequently taking meat three times a day to remove debility, whereas this too abundant use of animal food often increases debility, by causing dyspepsia and phosphatic urine; and even when these conditions are not present, patients are sometimes condemned to take an amount of animal food which they know will disagree with them, because the public, in its ignorance of physiology, believes that a beef-

steak diet which strengthens one person, will strengthen another. Many nervous women are made more so by too much animal food; their nervous systems are fretted by blood made too rich or over-carbonized. These women will derive greater strength from a moderate diet and a small amount of animal food than from generous living, because moderate diet will give the blood the crasis that harmonizes best with an excitable nervous system. To such patients I advise poultry, game, or fish, with strong beef-tea or savory sauce, and Liebig's extract of meat has been a great boon to many, while some thrive best on a milk diet. Dr. Kirsch, of Prague, looks on obesity as a predisposition to diseases of the sexual system, but this does not accord with my observation.

Many of my patients have been unusually thin, and I always do what I can to fatten them up by milk and other fatty substances, as well as by farinaceous food; and I have repeatedly noticed that they suffer less as they get fatter.

Stimulants.—With regard to stimulants, few patients consult me who have not been drenched at some time or other with wine, ale, or porter, often in direct opposition to their safer instincts, and I have seen young ladies rendered hysterical by undetected uterine derangements, who were kept half-drunk for weeks on stout and wine. However indispensable in certain cases of fever, large quantities of alcohol are objectionable in inflammatory affections, unless debility be very great. The practice panders to the strong propensities of our race, for we descend from nations whose notion of paradise was to drink perennial mead out of their enemies' skulls. Our grandfathers frequently brought festivities to a conclusion *under* the table; and even now, with all our boasted sobriety, we are the only civilized nation in which, after taking as much wine as is good for us in company with the ladies, gentlemen sit down to drink as soon as the ladies have left the dining-room. There is nothing new in the stimulant mode of practice, for Pecquet, whose discovery soon followed Harvey's, gave his patients little besides brandy, and, like Brown, he killed himself by drink. It would indeed be a pity if this system were to revive amongst us under the cloak of physiology, and I am glad to find that Dr. Wilks has expressed himself on this point as forcibly as myself. In general, stimulants should be considered as articles of diet, to be taken or avoided according as they have been found to agree or disagree, and to be left off altogether if they impair digestion or affect the head. Patients attach great importance to the particular wine they are to take, but my advice is to take that which they have found to agree best with them, believing that the kind of wine is of comparatively little importance, when only one or two glasses are taken in the course of the day. It is quite different with a man suffering from disease of the stomach or kidneys, for if he will have his daily pint of wine, it is of great importance whether it be claret or port. Doctors generally advise the

wine that agrees best with themselves, but the main point is to get genuine wine. Those who cannot afford to give a high price for sherry and port, had better drink claret or Baune. Among the Hungarian wines, Erlau and Carlovitz are red wines that may be depended on, as it has not yet answered the purposes of trade to adulterate or to imitate them. In general, the state of the blood, or of the digestion, may be correctly inferred from an analysis of the urine; but not unfrequently uterine inflammation so irritates the bladder as largely to increase its mucous secretion, and to lead to the formation of lithates and phosphates, the removal of which is to be rather sought in the cure of the main disease than by the prolonged exhibition of alkalies, as I shall mention when treating of the complications of uterine inflammation.

Sleep.—Lazily spending the hours that precede bedtime, sufficient but not too much clothing, lying with the head low, in a well-ventilated room, are helps to sleep, and it is further assisted by taking some support before going to bed, warm beef-tea or milk, or a cup of arrow-root made with milk or wine. Sleep is often prevented by the taking of too much tea; to those who take it three times a day, I say, take it once; take it with plenty of hot milk like *café au lait*. Five o'clock tea is a bad invention, and those who go to more than one of an afternoon, often take five or six cups of tea. To take tea after a late dinner is so absurd that it is going out of fashion.

The fumes of laudanum or some other sedative, outwardly used, make some patients sleep. Fifteen or twenty grains of bromide of potassium, taken at night, often succeeds; five grains of chloral with ten of the bromide of potassium, taken at night, is still more effective; but of hypnotics, more anon.

External Applications.—If, as Dr. Carpenter maintains, the interchange of gases contained in the air and the blood, on the cutaneous surface, has a share in the production of the body's warmth, we obtain an insight into the mechanism of topical applications. It is even stated that peritonitis has been subdued by extensively coating the abdomen with an impenetrable varnish, made with collodion 1 ounce, castor oil 4 scruples, and Venetian turpentine 30 grains; and this may explain why the constant application of oil-silk may be sufficient to diminish or remove severe pain. Some patients complain that the oil-silk commonly used, when it is applied over damp lint, sticks disagreeably to the skin; but a newly-invented *oil-tissue* is, in most cases, a good substitute for oil-silk; and as it only costs a shilling a sheet, when this impermeable paper is spoilt it can be thrown away. When the object is to place the abdomen in a kind of medicated vapor-bath, it is better to place over it flannel or lint made damp by some appropriate solution, and enveloped in oil-calico, such as is used at King's College Hospital. Any of these contrivances may serve to place the skin in contact with diluted laudanum, tincture of

aconite, turpentine, camphorated spirit, as well as with the lotions prescribed in the Formulary. The foregoing rather applies to bedridden patients; to those who can move about, I order a piece of piline, not spongio piline, eight by ten inches. I tell them to sew a bit of tape to two corners, and to tie it round the waist, so that it be placed over the lower half of the abdomen. Before putting it on in the morning, the soft side of it is to be sprinkled with thirty drops of a spirituous solution of morphia and atropia; the clothes will keep this application well in place. Therapeutic lint, or lint with an impermeable back, may be used in the same way, in summer, for it is not so warm as the piline, and it may be had of Messrs. Maw.

Fomentations.—Fomentations to the abdomen with warm fluids or water, holding an opiate in solution, are useful, but they are not often had recourse to, as they cannot be well applied without the assistance of an intelligent nurse. But very hot or cold fomentations are most useful in vulvar and sexual disorders.

Liniments.—Stimulant and sedative liniments can be sometimes made more efficacious by previously heating the skin with a flat-iron, or by using them after taking a bath, or in a hot room of the Turkish bath, so that more of the medicated ingredients may be absorbed, and the nervous expansions more powerfully acted upon. This holds equally good with ointments.

Ointments.—Besides prepared lard and spermaceti ointment, *vaseline* has been lately introduced, and bids fair to supersede the other agents; it has a staple composition, and does not turn rancid.

Plasters.—Piline, used in the way just described, is much more manageable and cleaner than plasters, so I never order them now, as they are dirty things, and interfere with the bath or sponge-bath. A good ready-made plaster may be had by spreading, with a paper-knife, stiff glycerine ointment on a piece of mackintosh cloth, which can be taken off, washed and re-applied, after spreading more ointment on it, as often as may be desired For further details I refer the reader to the Formulary.

Poultices.—In acute inflammation of the womb and the peritoneum, there is nothing better than a large, thin, hot, and well-made linseed-meal poultice, freely sprinkled with laudanum, placed next the skin, without any intermediate muslin, renewed every two hours, until the abatement of inflammatory symptoms. To make a good linseed-meal poultice, the meal should be placed in an earthen pipkin, boiling water gradually poured upon it, and when it is well mixed, it should be put upon the fire for a few minutes, stirring it all the time to prevent burning. Nurses seldom take this trouble, so their poultices are sometimes so badly made that the materials adhere slightly, and lumps of poultice may be found in various parts of the bed. A good poultice and a clean-looking one, can be made with rice, whole or ground, and being less liable to ferment, it is prefer-

able as an application to the mucous membrane of the vulva. When inflammation is very acute, I order half an ounce of an ointment, containing two drachms of extract of belladonna to an ounce of mercurial ointment, to be smeared over the abdomen, which is to be covered with a hot linseed-meal poultice; ointment and poultice to be renewed every two hours, while calomel and opium are given internally. Some patients prefer dry heat applied by means of bags of salt or bran. As inflammation abates, these remedies may be reserved for the night, or camphorated oil may be applied twice a day, the smeared surface being covered with cotton-wadding. Mustard applications are often usual as household counter-stimulants, the usual mustard plaster of equal quantities of flour and mustard made into a thick paste with boiling water, and spread on brown paper, or a linseed-meal poultice may be sprinkled with mustard flour, or with coarsely powdered camphor. In the chronic state of inflammatory affections, it is well to try a compress wrung out of hot water, applied to the abdomen, covering it with oil-silk, letting the patient wear this all day. In acute ovaritis, when pain is intolerable, and the patient too much reduced to bear leeches, I have sometimes advised the application of a bag of ice to the painful spot, and have kept it on, at intervals, for many hours, with temporary benefit.

Vaginal Poultices.—They were introduced into practice some thirty-five years ago, by Amussat, and are still used in Paris. Dr. Noel Guèneau de Mussy tells me they give great relief in perimetritis, when an abscess is felt pointing into the vagina. It is first necessary to place in the vagina a muslin bag, into which is injected, by means of a syringe, a pultaceous mass, made by boiling ground rice in a decoction of poppy heads. I have never tried these poultices, and do not think their advantages sufficient to recommend them to Englishwomen. At some of the Bohemian baths, it has been likewise recommended to introduce into the vagina bags filled with peat mud, as if a tannin suppository would not have a more astringent effect. This practice can claim antiquity, for it had been long known in India.

Vaginal Injections.—Vaginal injections are of great importance, for by their judicious administration one is enabled more speedily to cure inflammation of the sexual mucous membrane, and the patient can generally prevent relapses, by continuing their use. Nevertheless, I meet eminent surgeons and obstetric physicians in high repute, who cannot see their utility in abating inflammation of the sexual mucous membranes, although they advise the same patients to use gargles and collyria for sore throats and ophthalmia. I often find that patients to whom I have recommended injections to prevent a relapse, have been told by their usual medical adviser to leave them off, on the disappearance of leucorrhœa. Another reason why the value of well-made injections should be well understood is, that they constitute the sole local treatment to which

it is advisable to have recourse to in many very young women, suffering from congestion of the sexual organs and cervical inflammation, characterized by a purulent vaginal discharge. I have known girls of sixteen derive so much benefit from injections used under similar circumstances, that on the recurrence of the old symptoms they have, of their own accord, returned to the use of injections, till at last they outgrew the want of them. In this high estimate of the value of injections, I am glad to find that I am borne out by what Dr. N. Guéneau de Mussy has written on the subject. Very few of those who come to consult me have used injections in a rational way, and it is certainly strange that some medical men can continue to recommend their patients to use a small glass syringe, with which scarcely two to four ounces of fluid can be injected. Should such an instrument be only once emptied, its contents will not be sufficient to remove the uterine secretions from the vagina, if they be glutinous, and if it be repeatedly filled and emptied, it is very troublesome, without being effectual.

Those who still recommend glass syringes, for vaginal injections, should remember that a woman lost her life by using one, and died at Guy's Hospital in 1870. The instrument broke while in the vagina, and one of the fragments made a clean cut, half an inch long, to the left of the os uteri, and it extended quite through the vaginal wall, into the retro-uterine pouch. This woman, a patient of Dr. Oldham's, lost a great deal of blood at the time of the accident, and on the twelfth day she died of acute peritonitis. There is no better instrument than the vulcanized India-rubber syphon syringe, by which one or two pints of water may be injected and re-injected for any given time, but the best instrument will be useless unless the surgeon take the trouble to explain its object and its mode of use. It should be stated that injections are mere lotions applied to internal organs, and that the tube should be introduced as far as possible without giving pain. In order that the lower part of the womb, and the whole vaginal surface may be washed, the reclining posture on a hard sofa, with the edge of the basin under the seat, is the best position, and the liquid should be pumped up for at least five minutes. The temperature of the fluid should be warm or tepid in the acute stage of inflammation, afterward as cold as the patient can bear it, without being disagreeably chilled, and it is perfectly absurd to suppose that the use of cold water can give a morbid hardness to the cervix, as it has been lately stated.

It is generally accepted that incipient inflammatory action of the skin, and of the border-lands of skin and mucous membranes, are much benefited by the free use of very hot fomentations, so it is easy to understand that American practitioners should have found very hot water very useful as injections and irrigations in pelvic diseases. Some of my patients decidedly prefer them, and they ought to be extensively tried in our public institutions.

I would not dwell on these minutiæ if I did not believe that few patients derive their full benefit from the use of injections, and several have owned to me that they had not taken proper pains with them until after two or three relapses of uterine inflammation. A good way of ascertaining whether injections are well made, is to tell the patient to inject a strong solution of alum, just before coming to consult, for the surgeon will then be able to ascertain how far the injection has penetrated. Another mode of making injections is freely to wash out the vagina with tepid water, and then to inject a couple of ounces of a strong solution of the mineral salts I am going to mention, but I prefer the first way; even when the vagina is very capacious, the fluid will soon drain away, if the patient stands upright for a little while after the injection has returned. When injections are advised to prevent a tendency to uterine disease, in Europeans who reside in a tropical climate, cold water alone is requisite. Injections may be ranged according to their strength, beginning with those that are emollient: water, milk-and-water, glycerine and water, in the proportion of two or three tablespoonfuls of glycerine to a pint of water; linseed-tea, poppy-head decoctions, solutions of borax, chlorate of potash, acetate of lead, alum and sulphate of zinc, iron alum, decoction of oak-bark, solution of tannin, and tincture of iodine. One drachm of these salts should be dissolved in a pint of water, but only ten to twenty grains of sulphate of zinc, when it is prescribed alone, and a dessertspoonful of tincture of iodine. The same quantity of liquid ammonia, in half a pint of warm milk, is recommended to promote menstruation, and to enlarge an undersized womb. Two grains of corrosive sublimate to a pint of water is the proper strength for such an injection. Nitrate of copper has been used by Dr. E. Kennedy, in the proportion of one drachm to a pint of tepid water. Dr. N. Guéneau de Mussy speaks well of injections, made by suspending subnitrate of bismuth in a mucilaginous fluid, for the vaginitis of gouty and rheumatic women. Sulpho-carbolate of zinc, useful in gonorrhœa, should be tested as an injection. Seltzer water may be administered by means of the ordinary syphon syringe, but I have seen no good result from injections of carbonic acid gas in cases of cancer. Emollient injections are often usefully made three times a day; cooling injections are not required more than twice a day; alum injections not more than once, if used as antiphlogistic, but if as astringents to check the loss of blood, they may be required two or three times a day. When pain is complained of, it is well to add to each injection one drachm of laudanum, or an equivalent dose of other sedatives. Of these injections, the most useful is the solution of acetate of lead, but occasionally a patient will complain of its staining the linen with light brown patches; it is chiefly in red-haired women that I have seen this occur, and as these stains are indelible, the acetate of lead must be superseded by borax or chlorate of potash. I believe the stains depend on the lead coming in contact with a

very small quantity of sulphur, secreted by the skin, or derived from the rectal or vaginal secretions.

When the discharge is offensive, a teaspoonful of Condy's fluid, or a tablespoonful of the liquor carbonis detergens, may be added to the injection; a saturated solution of chlorate of potash is also useful under such circumstances. As a rule, injections should be discontinued during the menstrual period; but when it is difficult to heal ulceration of the neck of the womb, and in obstinate cases of vaginitis, it is advisable to continue the use of medicated injections during menstruation, and no danger can attend them, provided they be used warm. When the menstrual flow is protracted, I do not hesitate to try to stop it, after it has lasted for the time habitual to the patient when in health, by alum and zinc injections, used first tepid, and then cold, two or three times a day. Women seldom let injections be given to them, either by a nurse or a relation, so that in severe and in chronic cases, injections are more or less neglected, because the patients are too weak to use them, and prefer suffering to exposure. Others leave them off because they have not prevented relapses, but they can seldom be dispensed with, and to obviate the objections to their use on the score of personal exposure, the patient may avoid it by placing herself at the edge of the bed, with a cloth and bed-pan under her, while the nurse, holding the basin containing two pints of the fluid to be injected, can pass the tube under the bedclothes, and after the patient has placed it in the vagina, the nurse can pump in the usual way; but to do this, it will be necessary to have a tube three feet long fitted to the syringe. Whatever injection be used, the syringe should afterwards be well washed out with warm water, to diminish its liability to get out of order.

Dangers of Injections.—In those cases for which I reserve the name of *Irritable Uterus*, and in which considerable irritability cannot be accounted for by a great amount of well-defined disease, I have often found injections give pain, and do no good, so it is well to suspend their use. Twice have I been led to believe that the patient injected some portion of the fluid into the cervical canal. A lady was suffering from chronic uterine inflammation, the womb was low and slightly retroflected, the os uteri patulous, and after injecting a solution of acetate of lead in the usual way, she was suddenly seized with severe uterine pains, rigors, and intense cold. She got better when in bed, by hot abdominal poultices and hot drinks, and no bad consequences followed this attack. I have known the same to occur when the mouth of the womb had been left open by defective involution. The way to prevent this accident, which can only occur where there is something peculiar in the patient's formation, is to explain to her how far the tube is to be inserted, and how, for instance, to direct forward the slightly curved end of the pipe, when it is in the vagina, if the os uteri points to the sacrum. Such de-

tails deserve attention, for, singularly enough, the two severest cases of metritis in the unimpregnated womb, met with by Dr. H. Bennet, were caused by weak astringent vaginal injections. In patients acting on their own responsibility, I have repeatedly known the prolonged use of alum injections, as a preventive of uterine inflammation, to produce an irritable subacute inflammatory state of the cervix uteri; and when astringent injections are long required, to enable a relaxed vagina to support the womb, I advise injections of alum and zinc, and of oak-bark, to be used on alternate days.

I have several times been asked whether there was any danger of lead-poisoning from the prolonged use of a solution of acetate of lead, but I have never met with anything that could warrant the belief, though one patient wrote me word that she had been poisoned by injections, the gums having the characteristic lead marks; but as there had been no colic, I am doubtful of the fact. It has been stated lately that it was dangerous to long continue the use of injections of sulphate of zinc; but this is contradicted by my own experience and by that of many others.

Irrigations.—When a large quantity of water is used, injections are called irrigations; they are useful adjuncts of surgical treatment, but the utility of cold water irrigations has been exaggerated, insomuch that I have seen inflammation of the womb and ulceration persist after gallons of water had been thus used twice a day for months.

The frequent utility of hot hip-baths for the promotion of the menstrual flow is admitted, not so the great advantage to be frequently derived from their use during the menstrual flow, in spasmodic amenorrhœa and in dysmenorrhœa. American surgeons praise hot water irrigations in all important cases of pelvic surgery. They place the patient on her back, across the bed, with her hips well over its edge, each foot being supported by a chair; an india-rubber sheet is to be placed between the bed-clothing and the patient, to protect her, and to convey the water to a pan placed on the floor. Above the patient there should be a pail with a stopcock at the bottom of it, connected with a long india-rubber tube, terminated by the pipe that is to be introduced into the vagina, and by means of this apparatus the parts are kept irrigated by water as hot as the patient can bear. Dr. Fordyce Barker and Dr. Emmet have spoken highly to me of this proceeding, and it should certainly be well tried by us. I sometimes advise copious injections of cold water to be made while the patient is in a warm bath. This can be done by placing across the bath a plank, and on it a pail of cold water, into which one end of an india-rubber tube is plunged, after the air has been exhausted from it, the other end being introduced into the vagina.

Enemata.—These may be prescribed for a variety of purposes. When used to relieve the bowels, cold water is usually sufficient, and there are several good instruments by which it can be injected. The tube to be

introduced into the bowels should have a rounded extremity, be greased with cold cream, and gently inserted to a depth of about two inches; the water should be quickly injected, and retained long enough to bring away fæces, but not long enough to be absorbed. Patients have often done themselves harm, by frequently injecting too large a quantity of fluid; two or three pints for instance. This sometimes displaces and irritates the womb, gives pain by over-distending the intestines, or by stretching the diseased peritoneum, if there has been pelvi-peritonitis. Half a pint of water is generally sufficient, and sweet oil, brown sugar, common salt, or Epsom salts may be added, should water be insufficient to produce a purgative effect. I do not say soap and water, for I have seen it do great mischief when habitually used in large quantities, although this too may be occasionally useful, to fully unload the bowels.

Medicated Rectal Injections.—When sedative injections are advised, it is better to put the solution into a two-ounce india-rubber bottle, to screw on the pipe, introduce it with care, and then to firmly squeeze the bottle and withdraw the tube; the extremity of the pipes attached to these bottles is made too pointed, roughly finished off, and are likely to wound the anus. The vagina has much less power of absorption than the mucous lining of the rectum, so the best mode of abating the pain which accompanies uterine, vesical, and I may say pelvic inflammation, is to give opiates by the rectum. From twenty to forty drops of Battley's solution may be added to a little water, and injected by any appropriate instrument, into the bowels, but I usually combine several sedatives, prescribing Battley's solution one drachm, tincture of hyoscyamus one ounce, spring water three ounces. Half an ounce of this mixture contains eight minims of Battley's solution and one drachm of tincture of hyoscyamus, and I order this, or double the quantity, to be injected, as has been previously explained. The soothing nature of the fluid and its small quantity allows of its being almost always retained, and this can be repeated two or three times a day. If ineffectual, I add to the four-ounce solution, from four to eight grains of extract of belladonna, or from eight to sixteen minims of tincture of aconite, the dose being one tablespoonful, as above.

Suppositories.—I mean by suppository a solid medicament introduced either into the rectum or into the vagina, and I reserve the term pessary for the instrument left in the vagina to support the womb.

Rectal Suppositories.—Suppositories introduced into the rectum suit some patients better than injections, and give less trouble, but what will merely relieve pain when placed in the vagina may cause symptoms of poisoning if introduced into the rectum. The efficacy of a remedy depends on minute details, and the patient should be made to understand that suppositories must be introduced beyond the anal sphincter; for they sometimes cause great distress, if instead of being placed in contact with

a slightly sensitive membrane, they are left in the sphincter. Opium is the active ingredient of sedative suppositories, and I less frequently associate it with extract of belladonna than I used to do, because the temporary loss of sight and the dryness of the throat are often very distressing.

Vaginal Suppositories.—The opium suppositories introduced in the vagina, at bedtime, or when the patient is lying down, are very useful to relieve pain, although a considerable part of their active constituents passes away without being absorbed. In case of chronic congestion, or inflammation of the reproductive apparatus, and I prefer this term, for in many long-standing cases it is difficult to say what part of this apparatus is not diseased, I prescribe the nightly introduction of a suppository containing five grains of acetate of lead or iodide of lead or of mercurial ointment, or of inspissated extract of ergot. Vaginal suppositories are of course to be washed away the following morning, and it is to the advantage of chemists not to use too much wax in their composition, as it will prevent their melting in the vagina. On hearing from her doctor, that suppositories ought to dissolve, it is unsatisfactory to a patient to return them undissolved, and I have known several to change their chemist on that account. Cacao butter, or oil of theobroma, as we call it, is the best ingredient for vaginal suppositories, but in cold weather, to make suppositories, it is necessary to add a little lard to cacao butter, or they will not melt.

Baths.—When moving increases pain very much, as when some form of periuterine inflammation complicates metritis, warm baths do more harm than good; but great good is to be derived from their use after the subsidence of the more acute symptoms of inflammation. In acute internal metritis, I have often quieted distressing pain, better than by opiates, by making the patient stop in a hip bath at 96° or 98°, for three-quarters of an hour or an hour, every night before bedtime, some sedative liniment being well rubbed into the back and abdomen on leaving the bath. In chronic cases of internal metritis, and in acute inflammatory affections of the neck of the womb, the same plan is useful. The occasional use of the whole bath, given at a temperature ranging from 93° to 95° F. is also invaluable. As regards baths, we English are imbued with the most ridiculous prejudices. Ten minutes or a quarter of an hour is the most patients stop in the bath, when ordered one. Those who take meat twice a day, with beer or wine, will gravely ask if it be not very weakening to remain in the bath half an hour once or twice a week. For cleanliness this may be sufficient; but unless the patient stop an hour in the bath, its full benefit will be wanting. Alluding to an hysterical patient, Pomme says, "It is so difficult to conquer prejudice, that I could scarcely persuade her to remain ten hours in the bath every day." What would he have thought of patients who stare when they are told

to stop in it one hour? The strength of popular prejudice reacts on medical practice, and makes the profession forget the advantages of prolonged bathing for nervous affections. The bath not only removes saline deposits from the skin, and dilutes the blood, but it also acts on the whole frame by applying warmth to all the peripheric expansions of the nervous system. The warm bath acts as a sedative to the nervous system; it is a gigantic poultice, and a perfectly manageable one, as its temperature can be increased or lowered according to the patient's feelings and the practitioner's discrimination. When I wish to obtain the sedative effects of baths, I direct the patient to take them heated to about 93° F., and to remain in two or three hours, having warm water added at times so as to maintain a grateful temperature. A greater sedative effect will be obtained by letting the water cool down to 90° F., or even lower, the amount of water absorbed being proportionate to the low temperature of the bath. The utility of baths will be understood when it is remembered that in those who suffer most from uterine disease, the skin is cold, clammy, or dry, and seldom perspires; it is the same in the worst cases of mental disturbance, at the change of life. This tallies with old experience, for Hippocrates says, "*Melancolici in tantum curantur, in quantum balneantur.*" Galen, Aretæus, Cœlius Aurelianus, and Celsus ordered hypochondriacs to drink cold water, and use fomentations and tepid baths, and Hoffman and Baglivi did the same. Sanctorius has the following axiom: "*Hypochondriaci, si frequentibus balneis eorum corpora reddantur perspirabilia, et victu humido utantur, sani fiant.*" Pomme was largely consulted for diseases of women, and he owed his reputation to the sagacious manner in which he used water as a medicinal agent, both internally and externally. He generally made his patients stop in the water three or four hours a day; and ten, or even sixteen, in very severe nervous affections. If the plan were not really beneficial, it would not have been recently revived and adopted, under a modified form, in the lunatic asylums of France.

Hip-baths.—In all chronic inflammatory conditions of the body or the neck of the womb, cold hip-baths are very useful, taken immediately on getting out of bed, remaining in the bath, at first only two or three minutes, so as to have the full benefit of the reaction, the occurrence of which will indicate the safety of the practice. It may be afterward advisable to let the patient prolong the stay for ten or fifteen minutes. In winter the temperature of the water should be raised to 60° F., and there should be a fire in the room. The French think that the absorption of interstitial deposits in the uterine tissues is promoted by the addition of half a pound of the common household soda to the hip-bath, or of two pounds of the same to the full bath, and from four to six ounces of alum or ferruginous alum may be added when an astringent action is required. When medicated baths or hip-baths are taken, it is a pity not

to give the vagina and the cervix the benefit of their influence. This may be done with married women, at least, by telling them, when in the bath, to introduce into the vagina a little gutta-percha or china tube full of lateral perforations. Those who cannot bear cold hip-baths or shower baths, should sponge alternately with very hot and very cold water; and it is surprising how much good may be done in this simple way, if proper precautions be taken. Two large basins, with very hot water in one, and cold water in the other, and two large sponges, are all that is wanted; the patient will first freely use the hot, and then the cold sponge, and so on alternately for a dozen times at least. The cold water may be *occasionally* made more exciting by the addition of a tablespoonful of common salt, or of Tidman's salt. I say occasionally, for the late Mr. Startin used to say that the frequent use of Tidman's salt had made his fortune.

CHAPTER IV.

TONICS.

When insurrections spring up in a State, we know its constitution to be unsound, and that the reins of government are loosely held by incapable rulers; so are we justified in frequently ascribing the recurrence of well-localized inflammatory action to constitutional disturbance, and to the impairment of that vital force which is the endowment of every living creature. Hence the value of constitutional or of tonic treatment; and I believe that good hygiene and well-planned tonic treatment would suffice to cure three-fourths of the women who suffer from congestion, subacute inflammation of the sexual organs, as well as slight ulceration of the womb. With regard to the remaining twenty-five per cent. of such cases, the lesions being more serious, their cure often requires surgical treatment; but its efficiency will be increased if combined with the tonic treatment, and without it relapses are almost inevitable.

What is strength of constitution? It is variously exhibited in those who come under my care. There is the well-proportioned woman, with well-balanced organs acting together in perfect harmony, to whom the full tide of vigorous circulation imparts the attributes of the sanguine temperament. Here strength is evident, but it is met with in others to an eminent degree without being apparent at first sight. There is the well-proportioned woman, thin, although the digestive functions be good, with a clear, pale skin, looking delicate but reacting well on cold, bearing fatigue, and throwing off disease well and rapidly. When I have seen these women marry, I have been fearful of bad miscarriages and sickly children; yet some have safely borne large families, retaining excellent health, though always looking delicate. There is no possibility of denying the strength of such women. There are others in whom the nervous system has various morbid tendencies, and in whom the sexual organs must have been congenitally vitiated in structure or endowment, so badly have their functions been performed. I have seen these women rise from sickness, to go through an immense amount of bodily fatigue or mental anxiety; and though I have repeatedly despaired of their lives, they have recovered, and thus gone on till the cessation of menstruation, when they settled down into tolerable working health. It is impossible to consider

weak, women who have battled through life at such fearful odds, and have come off victorious.

There are likewise several kinds of debility besides that of acute disease, for which lowering measures are often the best tonic. Debility may be congenital or acquired.

First.—Congenital debility is very common, and differs in kind as well as in degree.

a. In some, the most careful examination leads to the conviction that the sundry organs are well equipoised; but it seems that the body was cast after a poorer and weaker model, to perform its usual functions in a languid fashion. It is often possible to trace this lower type of power to the fact of conception having taken place during the serious illness of one or both parents, or in the last stages of their procreative power, or to the long-continued misery and anxiety of the pregnant mother. I am telling the history of many women who have lived all their life in comfort, but prolonged deficiency of food or excessive blood-loss, induces a state of debility similar to that which is congenital. What can steel and quinine do for those whose vital power has been from the first pitched too low? In such women debility must be accepted, to a great extent, as a condition of their existence, which can only be improved by the slow renewals of nature, in the onward march of life by more fortunate conditions of life, or by a happy marriage. To attempt to raise the strength of these patients above its usual standard by steel and tonics, increases their sufferings, and has been often detrimental to those who implicitly continue to follow for too long a time in the country an opinion once taken in town.

b. There is a debility caused by the loss of that balance which ought to exist between the great systems that form the human body. The lymphatic temperament is sometimes characterized by this kind of debility. What matters our inability to define the lymphatic temperament chemically and histologically, so long as we can recognize it by its well-known characters, which lead us to expect less power of reaction against cold, a tendency of all mucous membranes to exaggerated action, of glands to swell, and of joints to enlarge. Against this kind of debility, medicine is potent, with hygiene and tonics, iodine being especially advantageous.

c. There is a debility dependent on the deficient bulk and power of some important organ. How many handsome men and women, young, tall, broad-chested, large-limbed, have a pasty look about them which excites suspicion. They are subject to cold feet and hands, and do not react well on cold; they cannot bear abstinence, fatigue, disease; they go on well through the plain sailing of life, but with all the outward appearance of strength; when touched by a moderate pressure of disease, the mainspring of life quickly runs down and snaps. The reason of this

may be, that the big form has a small heart and a poor weak pulse, and although steel and quinine may be useful in such cases, they will not enlarge the heart. Medicine cannot cure this radical debility, but, at least, it teaches the danger of lowering such constitutions. Akin to this, is the debility that blights the whole bodily frame of a girl in hitherto blooming health, owing to the imperfect evolution of ovarian influence at puberty, or to the arrest of that influence after its full establishment. Fortunately, against chlorosis, iron and tonic treatment are all-powerful.

Second.—Acquired debility may be met with in originally well-endowed human beings.

a. It may be the result of defective nutrition, owing to the want of sufficient food and of the fostering comforts of life, chiefly in infancy, childhood, and youth. In such cases, food, air, sunshine, and kindness are the best tonics.

b. There is a debility, mostly seen in women, the result of excessive loss of blood. To the discredit of medicine, there are a certain number of thin and blanched women, who have been so weakened by large floodings, or by a long-continued moderate drain, that they never recover their original strength. They fulfil the duties of life, but do so with a lower type of health. Tonics enable them to live on tolerably well, in accordance with that lower type, but they never recover the strength they could have relied on if habitual menorrhagia had been checked.

c. There is the debility of chronic disease. Confirmed invalids, and above all, those who are bed-ridden, after a partial recovery from one attack of illness, soon enter on another, and thus pass years in chronic convalescence. Deficient food, air, light, and exercise lower the energy of the chemical actions on which depend the nutrition and the repair of the body, while habitual recumbency reduces the power of the heart. In such cases it is useless to hope to restore strength to its original standard. Changes to where food, air, and light may be again accepted, as old friends with a new zest, is the best tonic; quinine and iron are often useless, and sometimes increase the patient's sufferings.

d. There is a debility arising from sundry poisonings of the blood, as for instance, syphilis, gout, rheumatism, and we depend on tonics in association with specific remedies. The constitutional treatment of local diseases is too firmly rooted in the medical mind to require advocates, but it would be wrong to exaggerate our knowledge and our power. We know the specific influence of iron in chlorosis, of iodine in scrofula, mercury in syphilis. We may look on quinine and on arsenic as nerve tonics. We may suspect that in the deepest laid framework of tissues, there may lurk some hidden taint; that another may lie dormant in the blood for a longer or a shorter time, to wake up again into morbid action, until it can be imperceptibly eliminated, but we are all of us too sound

practitioners to let our practice be governed by such knowledge alone, and we fall back on the broad principles of tonic treatment; that is all we can do to restore the working power of the system to its utmost strength, but when I say tonic treatment, I mean not only medicinal agents, but hygienic and mental tonics.

Sudden Collapse in Chronic Disease.—Patients living under these circumstances, living from day to day without reserve force, suddenly get worse without apparent cause. The milder samples of such an occurrence are common and need no comment; not so the rare cases in which collapse is as deadly as it is sudden and appalling. Long-continued loss of too much blood is the frequent predisposing cause of deadlike collapse, but in my worst cases there had been no unusual loss of blood. These patients had eccentric nervous systems, they were hysterical or had been so, having had explosive attacks, or the characteristic globus hystericus. A young lady of a decidedly lymphatic temperament and of a refined intellect, never had hysterical attacks, but during the long continuance of chronic ovaritis with uterine congestion, she would never allow me to press and well examine the left ovarian region, by abdominal manipulation. It made her feel uncertain whether to laugh or to cry, and insistance on my part would have inevitably brought on an hysterical attack. When a child at play with other children, she would dance about with her hands spread out before her stomach, to protect it from chance blows. In addition to a general state of congestion, there was considerable anteflexion, and I had already been attending her some time without doing much good, when she married, with my sanction, for there was a chance of marriage being beneficial, and at all events it would permit the better treatment of the case. Marriage was well borne, and I wished to leave her three months without treatment, but without known cause, she got very weak two months after the wedding. One day, after I had carefully examined her, and had pronounced her to be rather better than worse, she fell into a state of collapse, from which she rallied by the free use of stimulants and good nursing. While I was waiting for the recovery of strength to study the case under chloroform, so as to see whether the womb was fixed by adhesions, and whether it would be right to leave a bulb-headed pessary in the womb, there came another collapse of strength, and with it a very justifiable collapse of her husband's confidence in my skill. This is the only case of collapse, to such an extent, without known cause, that I have met with in one so young.

A lady about thirty-eight years old, the mother of a numerous family, the leading spirit in a large provincial town, having for years done everybody's business as well as her own, and rejected all warnings to rest awhile, was floored at last, body and mind, and had a succession of nearly fatal "drop-downs," as we used to call them. In this case, long-neglected uterine disease irritated an overstrained nervous system prone to insanity.

Proper treatment improved the uterine complaint and there is no longer a tendency to collapse, but the absence of the menstrual flow has caused a distressing state of mental exasperation. In those who are still about, a little over-walking will sometimes cause an attack, so will domestic worries with all invalids, but it may come in the midst of an unruffled state of things. The symptoms are well known, and resemble those of a blow at the pit of the stomach, anhelation, exhaustion, shiverings, a lowering of the temperature of the body, a cold clammy skin, disordered circulation, the pulse being too slow or too fast, always weakened, and often imperceptible. In a lady about forty-five the attack of prostration resembled an attack of ague, and opened with a succession of yawnings. The treatment is simple enough, but that does not prevent the danger of the patient slipping through one's fingers. The treatment consists in getting stimulants into the system as speedily as possible, and in stimulating the epigastric centre of nerve-force. For an emergency like this, there is nothing like brandy, and the patient bears large quantities of it better than of any other stimulant. It is to be poured down freely till signs of revival, but if the patient again collapses it is better to give brandy by the rectum, and less by the mouth. Hot beef-tea or soup should be very frequently given by tablespoonfuls on the patient coming to, and even when she is better, and can sleep, she should be roused every hour to take liquid food. Large hot poultices sprinkled with mustard should be immediately applied to the pit of the stomach and frequently renewed, for they lessen the amount of brandy required to rally the patient. The doctor has to show tact in apportioning the brandy, the patient is likely to die if he does not give enough, while too much will set up desperate vomiting. In the first case of the kind that I met with, I was so frightened that I poured a bottle of brandy down the throat of an unmarried lady under forty, and when she woke from alcoholic sleep she vomited for forty-eight hours. Most distressing sickness may be caused by a moderate amount of brandy, and to check it I have often been obliged to give ten grains of calomel, or to apply six leeches to the pit of the stomach. It is a marvel to me how a patient, just dragged out of a succession of deadly collapses, can then vomit incessantly for a couple of days without again collapsing! I have been kept on the *qui vive* for several months with some patients by the dread of these attacks, and the right course is to ward off the necessity to freely give stimulants by the judicious administration of the tonics about to be treated of.

Medicinal Tonics.—Combined with good hygiene, tonics cure congestion and irritation of the sexual organs, particularly when of recent date and in the young, but alone they cannot cure inflammatory diseases. I am daily called upon to treat, by surgical measures, patients who have been drenched with steel and bark, under their most approved forms, for many years; so their inability to cure severe uterine disease is to me an

indisputable and often ascertained fact. This does not prevent my associating such remedies with surgical measures in almost every case, and I only cease to prescribe tonics, on becoming convinced that they do no good. I have just said that constitutional strength varies in each individual, and when this level is unusually low, women are peculiarly subject to chronic affections, but unfortunately the system often refuses then to bear medicinal tonics, except in the mildest forms, and in the smallest quantities; large doses being positively detrimental. My rule is, to suspend tonics during the menstrual period, rather because it makes a convenient break in their administration, than from the likelihood of their checking the menstrual flow, but if debility be great, I do not let menstruation interrupt their exhibition, unless the patient be taking one of the mineral acids.

Iron and Quinine.—These are the tonics I mostly depend upon, given alone or together, but I seldom give iron when there is a tendency to flooding or to profuse menstruation. Well educated practitioners are already conversant with the history and properties of drugs, and it would be useless to repeat what can be found elsewhere, and they can scarcely fail in their choice, so excellent are the many preparations of iron and quinine, which we owe to modern chemistry. In summer I give chalybeates in an effervescing mixture, or prescribe the granulated effervescing citrate of quinine, or of quinine and iron. It is also very convenient to give Probyn's dialyzed iron syrup, or the syrup of iodide of iron. The tincture of sesquichloride of iron, with one drop of tincture of arnica to each dose of the preparation of iron, will be found useful in uterine affections; and when these are associated with dyspepsia, the lactate of iron, or the granulated carbonate of iron, are good preparations. I often give a pill, with one or two grains of sulphate of quinine at night, and much larger doses when neuralgia forms a prominent symptom of uterine disease. Dr. Monteverdi believes sulphate of quinine to have a special action on the womb, and that, like ergot, it contracts the uterus so powerfully as to bring on abortion and premature delivery, but I have seen nothing to justify this fear.

Strychnia.—This valuable nerve-tonic may be given alternately with iron and quinine, during successive inter-menstrual periods, and their combination is often useful.

Phosphorus.—I never try it till the previously mentioned tonics have failed, but if the system wants phosphorus, it will most likely be able to get it out of the hypophosphite of soda. Thirty grains a day given in some bitter infusion have sometimes done wonders in weak, thin, and excitable, neuralgic patients. Biscuits, each one containing five grains of the hypophosphite of soda, are sold by Van Abbot, of Vere Street, and are useful when other medicines have to be taken. Dr. George Wegner, of Berlin, states that if phosphorus be taken for some time previous to

menstruation, it leads to profuse menorrhagia and to the escape of much blood into the Graafian follicles, causing hæmatomata, often of considerable size. This was new to me, but three capsules, each containing a thirtieth of a grain of phosphorus, given to a lady as a nerve-tonic, caused bloody urine and very great pain and distress, which did not quite disappear for a fortnight. To patients with debilitated nervous systems and very painful backs, I have given phosphorus without doing good, but as homœopaths are said to cure neuralgia by *large* doses of phosphorus, it should be further experimented with.

Arsenic.—Its action is heroic in a host of cutaneous affections, and when we consider the structural analogies that exist between the skin and the mucous membranes, it is surprising that arsenic has not been more frequently tried. I have given it, with good results, in cases of chronic uterine inflammation with marked tendency to relapses. It would not be correct to infer that the disease of the womb was herpetic, because it yielded to arsenic, for this will also cure ague, but as a remedy, it will be doubly useful when uterine disease is combined with eczema or some other cutaneous affection. I thus wrote in the last edition, and subsequent experience has confirmed me in trusting to arsenic in long-continued uterine disease. Dr. Bernutz recommends Fowler's solution in pelvis-peritonitis, and Courty found it very useful in a case of chronic ovaritis, in which he gave it "*en désespoir de cause.*" Besides having a beneficial effect on the above-named organic diseases, it is said to restrain menorrhagia by Sir C. Locock, Dr. H. Hunt, Dr. Aveling, and Dr. Hanfield Jones. Arsenic has brought back too frequent menstruation to its right time, and cured dysmenorrhœa; it seems to restrain congestion of the sexual organs, and should be thought of in chronic diseases of menstruation. Arsenic may be given in the usual doses, till it congests the conjunctiva and the eyelids, dries the throat and furs the tongue, then the dose should be diminished, or left off and resumed, according to the circumstances of the case.

Mineral Acids.—I prescribe these acids to those who cannot bear stronger tonics, or who are not yet in a fit state to derive benefit from them. Mineral acids, by cleansing the tongue, give a relish for food, and enable it to be better digested by clearing the stomach of its foul secretions. They seem to check congestion of the liver, and to act favorably on the blood. I am not aware that one acid acts better than another, although phosphoric acid promises phosphorus to the system, and hydrochloric acid is one of the constituents of gastric juice. Sulphuric acid is reputed the best for menorrhagia. Mineral acids are suitable medicines in summer, and they should not be prescribed to those who will not promise to suck their medicine through a tube, and rub their gums with a damp tooth-brush coated with carbonate of soda, otherwise the dentist may be seen looming in the distance.

Hygienic Tonics.—I have already discussed the questions of food and stimulants at page 50.

Muscular exercise, under various forms, has already been considered, and it will be subsequently treated of as the means of preventing uterine disease. Cold and heat I shall discuss under the terms of Hydrotherapeutics and Turkish Baths.

Hydrotherapeutics.—Considered now by some as a panacea for all complaints, the more or less systematic use of water is as old as Hippocrates, and has been ever and anon greatly extolled. When cold is maintained in contact with the body for a time, variable in different constitutions, it acts as a sedative, whereas the sudden plunge into cold water only drives warmth to the great centres of vitality, to make it rebound to the surface with additional force. This is a popular experiment, but a French physiologist ascertained that holding one hand in iced water actually lowered the pulse in the wrist of the other hand, which had not been robbed of its heat, and Fleury found, by actual measurement, that douching the skin with cold water diminished the size of the considerably enlarged liver and spleen. Some of the appliances of hydropathy, such as injections and hip-baths, are valuable at all periods of the treatment of uterine affections, but a regular course of hydropathy is occasionally useful to prevent uterine relapses and restore a patient to perfect health. A single lady, aged twenty-five, was suffering from imflammation and slight ulceration of the neck of the womb, with distressing uterine symptoms, impossibility of walking, and great debility. The ulceration was cured, but congestion with uterine symptoms resisted all local treatment and tonics. I prescribed cold uterine injections twice a day to sit in cold water for a quarter of an hour before breakfast and before dinner, and to wear a wet cloth and flannel band over the abdomen all day. This was done, winter as well as summer, with so much benefit that she was able to walk a mile without fatigue, and felt much stronger, although she had left off wine. It is better thus to plan a treatment for the patient to follow out at home than to send her to an hydropathic establishment. At one of these institutions a patient of mine was not allowed to continue the use of acetate of lead vaginal injections as I had recommended, and another was not allowed even to use cold water for the same purpose. The food, too, is sometimes unsuitable, wine is not allowed, or the patients are told to drink it in their bedrooms, and homœopathy is generally advocated. To my own experience I must add that I have received several anonymous letters from ladies, stating that my qualified approbation of these establishments, in previous editions, had induced them to enter them; but that the treatment there adopted had aggravated chronic uterine disease. There was, however, a marked improvement obtained after many months' residence in a hydropathic establishment, in three cases in which uterine inflammation and neuralgia were elements of very complicated pathological

problems. When, however, a remedy is to be continued for six or twelve months, one must remember that in such a space of time the disease may have abated of itself, and that many invalids who leave home, to live six months with new and pleasant people, amid new and beautiful scenery, recover without the agency of cold water treatment. When cold water is used as a tonic, it is the sudden shock to the blood-vessels and their speedy rebound that is wanted, not refrigeration carried to the extent of depressing cell growth. The body should be, therefore, warmed by exercise or by bed before entering the bath, and the colder the water is the warmer ought the room to be in which reaction is to come on. As most of those who use cold water in winter do so in fireless rooms, cold water appliances often do more harm than good. A nervous lady of forty, who had been troubled much with chronic uterine disease, and a greatly distended state of the vagina, was always well in summer, but became much worse about December. I found this to depend on her persisting during winter with the same cold appliances by which she had benefited during summer. I therefore rather recommend, during winter, the alternate use of very hot and very cold water. A basin containing cold water, and another containing hot, with a sponge in each, forms a simple but wonderfully useful contrivance in a host of cases; for there is no woman too sensitive to be thus treated, and I have often found it highly instrumental in restoring delicate children to health, by having the whole of the spinal column treated that way, twice a day. This reminds me that Dr. Brown-Séquard, to cure neuralgia and prevent bed-sores, advised applications of ice for ten minutes, to be followed by very hot poultices for an hour.

Sponge-Bath.—Patients cannot be too strongly advised to continue its use, unless incapacitated by sickness. In winter the temperature of the water should be brought up to 60° F. by the addition of warm water, unless the room has been well warmed; this applies to all cold water applications in winter.

The Cold Hip-Bath, or Sitz-Bath.—If the patient do not stop more than a minute in the cold water there will be a strong reaction to the skin, and the internal organs may be thereby relieved; whereas, if she remain in it from five to ten minutes, a sedative effect is produced on the pelvic organs, which may tend to cure the last stages of uterine inflammation and prevent relapses, but the action of the prolonged cold hip-bath must be carefully watched, for I have often found uterine disease, in delicate women, made worse by it, as I have just mentioned. A handful of bay-salt or alum may be added to the water, and this can be discontinued when the skin shows signs of irritation. The sitz-bath may be taken before or after the sponge-bath, and those who can sit in it from five to ten minutes, should have a blanket thrown over their shoulders, and their back and limbs well rubbed on leaving it.

The Cold Bath.—There is nothing so invigorating as plunging into cold water, before the body has lost the warmth of the bed, and if it does not bring on chilliness, shivering, and headache, it may be taken for granted that it is well borne.

Range of Utility.—I have had patients, who, for months, had been in the habit of daily injecting into the vagina several gallons of cold water, without curing ulceration of the womb or its hypertrophy; hence I contend, that however useful as an adjunct, it is insufficient to cure uterine inflammation. During the progress of recovery, the medicated injections already mentioned are preferable; but, when the patient is well, nothing gives more tone to the mucous membrane, and diminishes the liability to relapses, than copious injections with cold water every morning; and it is still more necessary that it should form part of the morning toilet of all those who reside in tropical climates, as I have shown elsewhere.[1] If by douches and injections of cold water it is possible to keep uterine congestion in check, so as to diminish hypertrophy, it may also help a displaced womb to return to its normal position, render menstruation more healthy, increase the chances of conception, and diminish the tendency to abortion.

With regard to the action of cold water during menstruation, I am unable to speak from experience, because I have not felt justified in recommending its use; but I cannot help thinking that we exaggerate the power of cold applications on the menstrual flow. If they are not sufficiently energetic or prolonged to check reaction, the flow will not be thereby interrupted; for it is the prolonged action of cold, acting on the system so as to paralyze the vital organs and deprive them of all power of healthy reaction, that so frequently causes diseased menstruation and uterine inflammation. It is well known that the presence of menstruation does not prevent fisherwomen and bathing-women from entering the sea. Sanctorius affirms that the cold bath promotes menstruation. Pomme advised, for menstrual colics, to cover the abdomen with cold epithems and to give repeated draughts and enemata of cold water. Priessnitz did not allow menstruation to interfere with his cold-water prescriptions; and Dr. Fleury, who has written a good book on the use of cold water, states that cold uterine douches may be given during the menstrual flow, that they do not interfere with it when healthy, and they bring it back to a healthy type, if it be abnormal. These statements have been corroborated lately by Dr. Chapman, who treats defective and painful menstruation by placing ice-bags over the three lower dorsal and all the lumbar vertebræ. The results of this application are stated to be "a sedative influence on the ganglia of the sympathetic nervous system lying on

[1] Health in India for British Women, 4th edition. Messrs. Churchill, New Burlington street.

each side of the spinal column; a diminution of the nervous currents in the vasomotor nerves emerging from the ganglia acted upon, and distributed to the muscular fibres of the arteries of the reproductive organs; a diminution of the contractile energy of these muscular bands, so that the dilatation of the arteries which they surround is facilitated; and, by thus inducing in these arteries a state of ready dilatability, the production of the circulation of the blood through them in greater volume and with greater rapidity than before." Dr. N. Guèneau de Mussy objects to the theory, but approves the practice, and Dr. Routh and Dr. Rogers have spoken favorably to me of their trial of the plan at the Samaritan Hospital for Diseases of Women.

Turkish Bath.—It has been seen that the safety of cold water applications generally lies in the reaction they determine, and Priessnitz devised packing, with the view of increasing reaction, and as it were cooking a man with his own heat. I have found the *half-pack* useful, by which is meant, wrapping the lower half of the body in a large towel wrung out of cold water, and then in a blanket. Packing is, however, a tedious, clumsy way of procuring copious perspiration, which may be soon effected by placing a spirit lamp under a chair, on which the patient sits naked, with a blanket fitting tightly round her so as to retain the heat. When she is sweating freely, a shower-bath may be given, or a douche of cold water directed over the loins and pelvis.

The Turkish bath embodies the same principle. On remaining with scanty clothing in comparatively dry air, heated from 100° F. to 125° F. for about twenty minutes, the sensations are pleasant, and the skin soon breaks into a copious perspiration. The heat saturation-point of the system is, however, sooner reached by passing from the first room to another room, heated up to 150° F. This is at first felt to be disagreeably hot, but most people get accustomed to it, and the sweating is more abundant. Air heated up to 180° F. strikes like the blast of a furnace, and brick and wood feel burning. Notwithstanding what is said by those who have not tried the Turkish bath one can breathe freely at this high temperature, provided the skin acts freely. A man, aged forty-eight, weighing under eleven stone, being in tolerable health, and without spare fat, can stop an hour in dry air at 125° F. without the slightest discomfort, losing above a pound in weight, which is soon restored by a keener appetite and unusually sound sleep. His usual pulse is 60 per minute; after remaining in half an hour, it becomes fuller and rises to 80; an additional half hour does not disagreeably impress the organs of circulation. If, instead of remaining in a temperature of 125° F., he passes to a room heated to 150° F., the pulse rises to 100° or more, is full and bounding, and the heart is felt to be acting strongly, its sounds being audible to himself. The same sensations are more forcibly felt in air at 180° F. Faintness at the pit of the stomach, a kind of fainting quite different from

syncope, and called leipothymia by older authors, is the result of stopping too long in too great heat; vomiting may occur, and headache is frequent. I experienced all these symptoms of sunstroke, after remaining too long in a bath at Damascus. On leaving the hot room, the bather lies down in one less heated, to be carefully shampooed; after which, he is washed with warm water and soap, and then receives a cold shower-bath. This done, the bather retires to the cooling-room, and reclines for half an hour, the object of which is to rid the system of the super-abundant caloric, which would break out again in perspiration if he dressed immediately. The immediate effects of the Turkish baths, at least on me, are to make me feel lighter and stronger, and to improve my appetite and sleep. The fear of catching cold is groundless; for I have often protracted my walk home, to inhale a little longer the coldest air of winter, without ever being the worse for it. The advocates for the Turkish baths state, that it is so efficacious, that no disease can resist its influence, and so harmless that it can do no mischief. From the manner in which the heart thumps against the chest, when I remain for a few minutes in a room heated to 170° F., I am sure that the Turkish bath is calculated to do mischief, in organic diseases of the heart, or where there is a tendency to congestion of the brain and large vessels; in cases of confirmed consumption it has increased the frequency of hæmoptysis, so it is very injudicious for invalids to take Turkish baths without medical supervision.

In the Turkish bath, the whole organism is saturated with heat, which causes the more rapid circulation of the fluids in the depth and breadth of our tissues. The kneading of the muscles increases nutritive processes in innumerable capillaries; the shedding of the outer coats of epidermis excites the entire cuticle and assists the depuration of the blood. The result is a loss of weight, which is soon made up by an increased activity of digestion and nutrition; and it is this acceleration of organic processes which suggests the hope that the Turkish bath will be found useful in many constitutional complaints, by combining it with judicious food and medicines, so as to constitute a species of *medical training:* for, if a jockey can lose a stone, by remaining in the bath three or four hours for several consecutive days, eating little and drinking less, it stands to reason that medicine might adopt the same process of training to renovate the diseased constitution. I have watched the influence of a high temperature on the shampooers, who remain in the bath about twelve hours a day, and they are strong active men, seldom stout, but in good condition. One who weighs thirteen stone, loses about ten pounds a day in the bath, which loss is daily compensated by food, water, and other fluids; the same man has lost as much as thirteen pounds in the day, by stopping four hours in a very hot room, but immediately afterward he walked five miles with perfect ease. Lest it should be supposed that these are exceptional cases, I may mention having met with gentlemen

who have taken the bath every day for six weeks, and that it rather increased than diminished their strength. I have entered into these particulars to show that every hospital should have a Turkish bath attached to it.

The application of the Turkish bath to the treatment of uterine affections is very limited, and I advise my patients not to use a higher temperature than 125° F., which can do no harm. When neuralgia of the pelvic nerves survives inflammation and ulceration of the neck of the womb, the half-pack is useful, and Aran used to give his patients a course of twenty douches of cold water on the loins, the body being previously brought into a state of sudation by sitting over a spirit-lamp. The Turkish bath twice a week is useful in such cases. In chronic inflammation of the body of the womb, there is often a state of languor and debility, that predisposes to relapse, and I have found that Turkish baths, taken once or twice a week, brought up the vital power to the utmost limit of its energy in the shortest possible time. My worst cases of uterine inflammation, those accompanied by obstinately distressing pain or by singular nervous symptoms, have occurred in women who had a deficient action of the skin, who were always cold, and who had no sensible perspiration. This indicates the Turkish bath, and in some cases it was useful, though not well borne in others. The treatment of chlorosis is proverbially tedious, and may be greatly curtailed by combining steel with the occasional use of the Turkish bath. Those who return invalided from India, will find benefit from the Turkish bath, taken once a week or ten days, for this will assist medicines to keep in check the tendency to congestion of the internal organs. I have ordered the Turkish bath to remove fat from stout and unhealthy women, combining it with abstinence from farinaceous and oleaginous food, and the endurance of thirst. "It is the drink that makes the weight," said a trainer to me.

•Change.—Even trees are benefited by change, and when it is asked of them to grow in town, their constitution is strengthened by repeated shiftings, from one part of the nursery to the other, and from one locality to another. There is truth in the popular belief in the efficacy of change, for it is capable of curing half the minor ailments to which we are liable. The idea is thoroughly English, for the French equivalent, "*aller aux eaux*," embodies the notion of medicine with that of change. Man degenerates when confined to one air, one food, one occupation, and one idea; with change, his powers expand, and the most powerful are always the most versatile. Change of air means change of habitation, water, food, habits, and mental associations; and so great is the utility of change, that rather than have none at all, it is better for a man to remove occasionally from a healthy, to a less healthy set of influences, provided his stay be not too long. Healthier conditions are generally found in change; the lungs obtain purer air, the appetite is sharpened by new

food, the imagination is enlivened by new scenes and faces, late hours are exchanged for early rising, and the cares of home for the freedom from home duties. Such are the circumstances that give such tonic influence to change of air; and their enumeration is essential, since to them is to be attributed a large share of the benefit derived from travelling, seaside residence, mineral waters, hydropathy, and even from marriage. Change is a modified form of "training," for it means little mental excitement, earlier hours, simpler food, regular exercise, outdoor life; but, as with training, the possible benefits of change are limited.

Travelling.—Travelling is change of air multiplied by change of air, but one should travel with prudence, for if countries are "*done*" with furious haste, the mind is often overstrained and the strength exhausted in a way more calculated to cause relapses of chronic affections than to promote their recovery. Those who, in autumn, pass like a shot from England to Italy, often suffer from severe bilious attacks, which they would have avoided by travelling slowly; so that the body may pass gradually from a cold to a warm climate. On the other hand, nothing is more likely to intensify any uterine indisposition that may be caused by marriage, than the insane plan of starting immediately after a wedding for Paris or Rome. After the excitements and great fatigues that precede marriage, and the shock it gives to the system of a woman, perfect rest in the new home for a few weeks, would be the most rational course to follow, according to the custom of all other nations. There can be no objection to a short journey to a quiet place, but long railway journeys, and the necessity of starting at inconvenient hours, fatiguing excursions, systematic sightseeing, interfere with menstruation and cause uterine congestion to become inflammation, likely to be misinterpreted and neglected, till it has been aggravated by the return home. Dr. Guèneau de Mussy has also seen disastrous results of foreign travel immediately after marriage, and he has lately added his condemnation of it to mine. Only idiots can devise or sanction a riding tour during the honeymoon.

Seaside.—Seaside air contains more ozone, and is mixed with saline particles by which the skin and lungs are beneficially influenced. Sea water may be used in the sponge-bath, alone, or with one-half of spring water. It may be also occasionally taken as a vaginal injection, and tepid sea-baths can be obtained for those who are too weak to bathe in the open sea. Hot sea-baths are useful to women with very languid circulation, but they should never be taken except by medical advice. Sea-bathing is an admirable tonic, though its action is not always the same; for how different it is to stew for hours, at Biarritz, in the hot brine of the Mediterranean, or to plunge for a few minutes in the bracing billows of the Atlantic! The former might suit those who have slight powers of reaction, but the latter is most beneficial to the generality of women.

There is virtue in all living water, even river baths are of great value; and we may live to see in the Thames large well-conducted floating baths similar to those in Paris, where so many delicate girls recover their health. Brill's swimming-bath for women, at Brighton, is an excellent institution. Whether the patient merely plunge into the sea, receive the shock of the coming billow, or swim, she should keep to the golden rule of stopping within the limits of her power of reaction; and not think that, because it is good to stay five minutes in the water, it would be better to remain an hour. The seaside is as useful as any other change, to recover health undermined by diseases of the womb, and the only ill effects I have heard attributed to a seaside residence, was by a patient who has a large uterine fibroid, and who felt convinced that a temporary residence at Brighton always brought on flooding; but this might have been caused by railway travelling.

Mineral Waters.—If change of air and travelling benefit the health of those who have been long suffering from uterine disorders, it is obvious that a residence at any of the mineral watering-places will serve the same purpose. This is why patients suffering from chronic inflammatory affections of the womb, will often recover at any kind of spa. The medical men at all bathing establishments may therefore fairly boast of curing diseases of the sexual organs, the more so, as every well-appointed spa is well supplied with hydropathic appliances, such as ascending douches for chronic congestion of the womb, alternate hot and cold douches for back pain, the neuralgic survival of uterine disease, and sometimes mud-baths, as at Franzensbad. After ascertaining in what direction a patient wants to go, a practitioner will be guided by general principles in recommending her where to go. It is often advisable for women to spend three weeks at Ems, where alkaline water is well calculated to remove congestive irritation of the liver and gastro-intestinal mucous membrane, and to proceed afterward to the chalybeate waters at Schwalbach, stopping there for a month or six weeks.

The sulphureous waters of the Pyrenees, of Louesch, and of Aix-les-Bains will be often found useful in very chronic cases. There is a tempting variety of useful German waters, and even Kreuznach may do good, although there never has been recorded one really trustworthy case of its having caused the absorption of a uterine fibroid, or of an ovarian tumor. There is a tendency at most mineral water establishments to use hypogastric douches and ascending douches with too great vigor; their too strong action rather tends to give activity to peri-uterine inflammatory affections, than to metritis, and their use should be suspended on the coming of pelvic pains and of fever. Thousands of our countrywomen who cannot go abroad, will find in Tunbridge Wells, Buxton, and in Bath, admirable substitutes for foreign watering-places. Perhaps the medical men in attendance at *our* watering-places might take a hint from those

who practise at foreign spas; they often drop in at the "Etablissement des Bains" to see how their patients get on; they thereby know when to modify the treatment; this encourages the patients, and keeps the attendants well up to their work.

Electricity.—Perhaps we may hereafter learn to restore strength by electric baths, but I am about to draw attention to more certain ways of using electricity as a tonic. No permanent benefit can be expected from the use of electricity, until all active uterine mischief has been quelled by antiphlogistics and other treatment; but long after the primary cause of pain has disappeared, there often remains a weakly condition of the nerves; and any slight disturbance of the system, cold, fatigue, or anxiety, is sufficient to renew the pain. Both faradic and voltaic electricity have the power of relieving this pain; but the effect of the former is less lasting than that of the latter, as it is greatly inferior to it in its tonic effect. With regard to faradic electricity, Dr. Althaus[1] has repeatedly observed, that when applied for various diseases, it has unexpectedly brought on premature menstruation, and he assures me he has occasionally been obliged to desist from faradic treatment, because it caused profuse menstruation. One advantage of treating reflex uterine neuralgia by the continuous current, is that, if it is to cure, it affords some relief from the first, and the pain ought soon to disappear, when it returns the day after the first application. Indeed, if no benefit accrues from the continuous current, there will be generally found some hidden source of mischief requiring other treatment. When these indications have been met, electricity will remove the pain. I follow the advice of Dr. Stephenson,[2] the Aberdeen University Professor of Midwifery, and I electrify the patient every day for the first two or three days, and then at such intervals, as may be suggested by the return of pain. When prostration, debility, and back pain are marked at the change of life, without evidence of pelvic organic disease, the continuous current will take away pain, and sometimes give a surprising increment of strength. Several batteries are commendable, and electricity is applied by means of flat copper saucers with flat handles. The wet sponges, two inches in diameter, are kept in the copper saucers by means of a wooden rim, that fits on like the lid of the old-fashioned wooden snuff-boxes. The patient's clothes should be arranged to permit one of these saucers being so placed, that the surface of the sponge may cover the skin of the back above the seat of pain. The other sponge is to be first applied to the abdomen above the pubis, and it should then be moved to the iliac regions and the thighs when the patient complains of pricking sensations. At first only a feeble current should be used, for about ten minutes; the strength of the current may be gradually in-

[1] Medical Electricity, 2d edition. Longmans.

[2] Transactions of Obstetrical Society of Edinburgh. June, 1881.

creased, but a strong current should never be used for a long time, as it causes a feeling of weariness in the back and limbs. Passing the current downward, along the line of the suffering nerves, seems to be most soothing, but after one or two sittings a greater tonic effect is produced by voltaic alternatives, that is, by frequently changing the direction of the current during each sitting. The point I wish to enforce is, that the pain-state of a nerve may be readily excited long after the primary cause has ceased, and no greater aid to diagnosis exists than the constant current. Many a patient may be too long drugged with anti-rheumatic remedies for pains when the rheumatic condition no longer exists. Many a poor woman may be much too long treated for uterine disease, by caustic applications, by those who have yet to learn that after a time they may do more harm than good, and should be supplemented by such tonics as may be suitable, among which electricity occupies a conspicuous place. The same mode of treatment, or faradization, often cures the *reflex paralysis* of uterine disease, what is called hysterical paralysis, or hysterical paraplegia. I have known women who for years had been bed-ridden by chronic ovario-uterine inflammation, and who only began to recover the power of walking, immediately after beginning to use some of the not very potent electrical batteries, by which patients can apply the continuous current to themselves. Faradism must not be used in such cases, as it is liable to bring on flooding.

Marriage.—If prudently entered into, marriage for women means occupation, happiness, and success. Inactivity is a positive debilitant of the human frame, for nutrition derives a healthy stimulus from exertion, and many women, if unmarried, become really ill from having nothing to do; they can be cured by some engrossing occupation; and in whatever sphere they may be placed, they should seek the benefit of this tonic as far as possible. The occupation should, however, be pleasant; the sight of vigor is positively invigorating, while debility is contagious—a circumstance that explains why some patients cannot recover their health until they are removed from the constant society of valetudinarians. The depression of adverse circumstances sometimes prevents the cure of chronic uterine affections, of which I have given abundant clinical proofs in another work,[1] and I remember having attended many single women of mature age, whose health of body and of mind have been irretrievably ruined by the long-continued nursing of a mother or a sister, and who were not in the least aware that they had been doing anything deserving of praise. It is difficult to calculate the power of that anxiety which is at hand to close the day, is ever ready to face its victim on waking from troubled sleep, and to accompany her through each long, tedious day. Chronic anxiety poisons every mouthful of food, passes into the blood,

[1] Uterine and Ovarian Inflammation, etc., Third Edition.

circulates with it, spoils the nutrition of every tissue, becomes part of the frame, and fixes more particularly on the nervous system, which then responds inordinately to the mildest pathological stimuli, and seems to give spontaneous birth to nervous disorders, as surprising by their pertinacity as by their independence of rule.

Success is another tonic of tremendous energy, for the wounded conqueror escapes the typhus which decimates the vanquished. Professional men of strong constitution try London, and retire with shattered health, ruined, not by the smoke nor by the fogs, but by the depression which gnaws at their vitals day by day; while success has enabled many a weakly frame, if tempered with common prudence, to live on for years in the midst of vast labor. For women, marriage means success, and as our social state prevents the marriage of thousands of healthy, blooming women, it follows that they continue to perform their part in the routine of daily duties, while the canker of disappointment is sapping their strength. In marriage, considered as a tonic, we must take into account this mental satisfaction of success, the emotional stimulus of affection given and returned, the physiological stimulus of matrimonial intercourse on the whole frame, and the complete change of circumstances in which the bride is placed.

CHAPTER V.

SEDATIVES.

Man's greatness is shown after a lamentable fashion, by the endless variety of aches and pains by which he is teased or tormented, and by the lifelong power of enduring their fiercest assaults. Besides pain, man is vexed by an army of strange sensations, overwhelming emotions, and vexatious thoughts. Nevertheless, pain often serves a useful purpose, for, as a rule, it insures the cure of a host of diseases, which would otherwise only become known when incurable. To assuage pain, man has been made to a certain extent self-sedative; many pains are cured by sleep, and for that purpose, sleep is prolonged and intensified by certain diseases, and by various abnormal conditions of the sexual organs of woman. Moreover, medicine has imitated nature, and knows how to bury pain in various kinds of sleep. Pain is, after all, much easier to bear than the abnormal sensations that arise in the brain, and in the epigastric centre of the ganglionic nervous system. Some of these strange states are evidently the reflex outcome of ovario-uterine disturbance, and the rational cure of this ovario-uterine disturbance is the real sedative that women want more than the empirical use of drugs. What I think most useful to counteract the nervous affections sometimes caused by ovario-uterine disturbance, will be found in what little space I can allot to 1, Hysteria; 2, Catalepsy; 3, Epilepsy; 4, Insanity; 5, Pseudo-narcotism; 6, Spontaneous Orgasm; 7, Masturbation.

Hysteria.—It is a pity pathologists should be at variance respecting the nature of hysteria, for it enters largely into the morbid history of woman. I do not think it would advance matters to reserve the word hysteria for "a mental defect requiring moral rather than material treatment," as has been suggested by Dr. Hanfield Jones. It is better to accept the word in its traditional sense, as characterizing a neurosis peculiar to women, and *emotion gone mad* would be my definition of hysteria, were I obliged to find one. There is no emotion without visceral reaction, and the inordinate reaction of the sexual organs on a predisposed nervous system shows itself by hysteria. This is the view taken of the disease by almost all those who profess to be well acquainted with diseases of women, to whatever country or school they may belong, while, on the other hand, a limited number of excellent pathologists, who

profess to know little of the diseases of women, assert that the word hysteria is the miserable misnomer of a nervous affection, that has no more to do with the sexual organs than with the liver. It is unfortunate that some of these pathologists should ignore the state of menstruation in the cases of hysteria they publish, and they do not seem aware that by being able to note it as healthy they would strongly substantiate their own hypothesis.

Neither do these pathologists notice the physiological basis on which rests our belief, that diseases of the sexual organs will cause hysteria in women predisposed to it; I allude to the fact that some young women remain healthy uutil first menstruation; and that although this function may be well performed, it brings on an attack of hysteria, because the nervous system is so badly tempered that it is, as it were, poisoned by the healthy stimulus of ovarian influence. They forget that connection has been repeatedly known to cause hysteria in women, who had not previously suffered from it; nor do they notice the occurrence of hysteria in young and healthy widows, in whom matrimonial habits have been suddenly suspended, and in prostitutes on their first entering penitentiaries; nor that symptoms similar to the minor forms of hysteria have been noted in men who have given themselves up to masturbation; and also in others, who, after having been accustomed to sexual intercourse, have, by a sense of duty, successfully restrained strong desire during a protracted courtship. They ignore these facts, or they would admit, that if healthy ovarian action will evolve hysteria in those predisposed to it, the morbid condition of these organs may likewise do so.

In two long and elaborate clinical lectures on "Hysterical Vomiting," Dr. Hyde Salter never intimated the indissoluble connection of vomiting with the physiology and the pathology of the womb, and that vomiting cannot be called hysterical or nervous when it is explained by structural disease of the womb. Nor was it stated that any examination had been made, although the subject of the lectures had many uterine symptoms; and when I wrote, objecting to this kind of pathology, Dr. Salter admitted the correctness of my strictures; and said that he had forgotten to mention that he had asked the physician-accoucheur of Charing Cross Hospital to examine the patient, but he omitted to state what kind of examination had been made.

To show the practical importance of this question, I confidently appeal to those who are engaged in consulting practice, whether they do not far too often meet with cases in which uterine disease has been overlooked by men in high position, the symptoms being ascribed to hysteria; drugs being given when surgery was wanted; walking recommended when rest was required; and exertion enforced, instead of endurance of the inevitable. I shall merely mention a bad case of chronic inflammation of the body of the womb, with spongy softening of the cervix, frequent

menorrhagic or purulent discharges, and a host of hysterical symptoms. This case has been attended for three years by several hospital men, who called it hysteria—spinal irritation; and for a well-known orthopædist, now dead, it was a case of hysterical back; it had been repeatedly blistered, but no examination of the womb had been made.

Turning now from pathologists who write of hysteria in ignorance of diseases of women, to those who are acknowledged to know them as well as they do the diseases of the nervous system, there are certain interpretations of hysterical phenomena from which I decidedly dissent. For instance, there are men for whom hysteria is equivalent to lust. They lose sight of the twofold action of the sexual organs on the system. One mode of action, that begins at puberty to end with the menopause, is incessantly progressing, although it may be modified by disease, as in chlorosis; whereas the mode of ovarian action productive of erotic desire is intermittent, and depends on many incidental influences. Hysteria is also observed when sexual desires are most moderate; and I have met with it in women who loathe connection, and in girls before sexual instinct had awoke. I have met in consultation men who call hysterical the actual symptoms of ovario-uterine affections, whereas every form and degree of these affections may be made apparent by their own specific symptoms, without ever bringing on hysteria, and can never do so without a special predisposition on the part of the nervous system.

Lastly, there are others who go on the principle of *omne ignotum pro hysterico*, and who call hysterical pain and all symptoms met with in women when they cannot be accounted for by some definite local lesion. I think the term should be restricted to cases in which neuralgia or unaccountable phenomena coexist with, or intermit with, evident signs of hysteria, such as extreme nervous excitability, rapid or motiveless passage from tears to laughter and globus hystericus—the best single sign of the hysterical state.

There are two factors of hysteria: 1, a predisposition on the part of the nervous system; 2, a determining cause.

First.—Of the predisposing cause we may safely say that it must depend on that modification of the nervous system which makes the nervous system of woman more prone to emotion than her mate's; otherwise, how is it that the disease is in the main feminine, and only met with in men whose nervous systems are built on the feminine type? We moreover know that, although a disease of every climate and social condition, hysteria is most frequent in women of the upper classes of the civilized races, in whom emotionalism is intensified at the expense of reason and self-control by injudicious training in childhood, and the subsequent pampering that ill fits them for the trials of life. We can go no further than to admit this undue action of the nervous system as the predisposing cause of hysteria. It may be that in severe cases this predisposition may

be so strong as to be of itself sufficient to bring on the disease. At all events, we know that there are various degrees of intensity in this predisposition, and that the slightest determining cause will make some women hysterical. In a family with which I am intimate, there are ten healthy children, whose parents are not in the least nervous; but a paternal uncle is insane; two maternal uncles died of delirium tremens; one brother has been epileptic from childhood; and a sister died of meningitis. Out of these ten children, two little girls, one when seven, the other eight years old, burst into tears if they were looked at, if they were not placed as they liked at table, and were not helped in their right turn. They would pass rapidly from laughter to tears, which abundantly flowed for hours, and they had sometimes globus hystericus. These symptoms have been repeatedly quelled by preparations of iron: but they returned, and must be taken as evidences of the hysterical state. Now they are seventeen and eighteen years of age, are always nervous, and they sometimes have hysterical attacks.

Second.—With regard to the determining causes of hysteria, those should be first mentioned that intensify all nervous affections, debilitating influences like great loss of blood, diseases, physical shocks, mental and emotional shocks, prolonged worry, and want of sleep. Neither should I omit the contagion of one hysterical nervous system on another predisposed to become so.

With regard to the most important of the causes of hysteria, we cannot define the nature of the sexual stimulus, that evolves hysterical manifestations from the nervous system, but we know it does not depend upon extensive lesions of the sexual organs, for ovarian abscess and chronic tumors do not cause hysteria, except sometimes in their earliest stages, neither do acute metritis or cancer, whilst hysteria is often associated with subacute or chronic inflammation of the ovaries and womb. We also know that inflammation of these organs is in no wise necessary to bring on hysteria, that it very frequently accompanies their congestion and irritation at menstrual periods, at puberty, and at the change of life; so we are led to conclude that the starting-point of hysteria is, in most cases, an aura, like that preceding an epileptic fit, starting from the ovaries, to react on the brain and on the spinal cord. In some patients, by pressing on one of the ovaries, I have unexpectedly caused hypogastric pain, epigastric disturbance, and globus hystericus; symptoms followed by a fit of hysterical convulsions. In a case of subacute inflammation of the womb and ovaries with anteflexion, the slightest pressure on either of the ovaries causes hysterical laughter, and Romberg and Schulzenberger have recorded similar cases, pressure of the finger on the ovary producing hysteria, as easily as sound is produced by striking the keys of a piano.

More recently Professor Charcot, of Paris, has repeatedly seen hysterical attacks suddenly checked by firm pressure on the ovarian regions,

and this reminds me that by firmly pressing the pelvis with cushions, Boerhaave checked an hysterical attack, and I have seen Récamier suddenly extinguish hysterical convulsions by causing a lady's maid to sit on her mistress' belly. In most of Professor Charcot's cases there was some irregularity of menstruation, but the seizures did not correspond with the catamenial periods, and there was always marked anæsthesia.

It requires no medical knowledge to diagnose an hysterical attack, but the diagnosis of all other hysterical manifestations is deplorably loose. Hysteria is a perturbed state of the nervous system, which does not so much manifest itself by paralysis or convulsions, anæsthesia or hyperæsthesia, despondency or exhilaration, angelic ecstasy, or demoniacal mania, as by the motiveless advent of one of those states, and the rapid passage of one into another, to vanish again without any permanent damage to the system; in fact, mutability is characteristic of hysteria, because it is characteristic of women—"*La donna è mobile.*" When there has been hypogastric pain or distress, epigastric suffocation, choking sensations, and a motiveless passage from laughter to tears, or the reverse, hysteria is evident.

Of all the symptoms of hysteria the most important is "the globus hystericus;" when well marked it is pathognomonic of hysteria, and if its absence coincide with that of several of the other symptoms I have enumerated, I do not see how a practitioner is justified in calling the case hysterical. The diagnosis will be confirmed by the fact of the patient having previously had one or more hysterical fits, but as the predisposing cause of hysteria is a *transitory* state of the nervous system, it is a very great fallacy, because a patient has had hysterical fits, to set down as hysterical whatever obscure nervous symptoms she may present in after life. For instance, a lady who at the change of life suffered from severe and constant pain in the right side, was considered hysterical because she had suffered from hysterical fits some years before. She was therefore told to exert herself and shake off the pain, but this she could not do, and found relief from large doses of morphia. When she died, a few years later, an abscess was found in the liver.

The coincidence of hysteria with diseased menstruation, shows the urgency of setting this to rights, and, guided by the rules I have already laid down, the practitioner should ascertain whether hysteria really depends upon disease of the sexual organs, whenever there are symptoms to render this probable. To dismiss a case in an off-hand way as hysterical is most unjustifiable, for the patient continues to suffer, although the fears of her friends are allayed. Say to the friends, "It is only hysterical," and the question is settled. A constant pain in the back will not be further inquired into, although irregular menstruation and vaginal discharges may point to the womb as the seat of disease, and the patients will be told that they can get well if they like, that they have only to

exert themselves; and they will be stuffed with beefsteaks and porter, and drenched with stimulants and tonics. If they cannot walk they are said to suffer from hysterical backs. I have attended many cases so-called, patients whose backs had been blistered, and who had been kept lying flat upon them, for one, two, or three years. These patients were really suffering from confirmed uterine inflammation, and they recovered as soon as this was cured. It is very sad for patients and their friends to awake to the conclusion that some of the best years of life have been wasted in the following out of useless prescriptions; but saddest of all if it becomes apparent that hysteria has been to the medical adviser a "will-o'-the-wisp," misdirecting his attention from the real source of nervous symptoms, which might have been once cured with comparative ease, but have become deeply rooted in a debilitated constitution. I call back-pain hysterical when it cannot be explained by any structural lesion of the back itself, or of the abdominal viscera, provided it coincides with "globus hystericus," and other signs of the hysterical diathesis; or if with slight structural mischief, there is inordinate back-pain, and evident signs of hysteria; then I say the back-pain is hysterical, and I reason in the same way with vomiting, or with any other of the ordinary symptoms of uterine affections.

Indications.—1st. To blunt the sensitiveness of the nervous system by sedatives and anti-spasmodics, and to strengthen it by metallic and other tonics and by judicious hygiene. 2d. To cure all diseases of the sexual organs, and save the nervous system from visceral irritation, by good hygiene at menstrual periods; or by marriage, when the sexual organs seem to want, and disposed to bear their legitimate satisfaction.

Catalepsy.—Like hysteria, this affection is very seldom met with in men, and the same mild forms of ovario-uterine disturbance which so frequently cause hysteria, will cause catalepsy, if the patients are predisposed to it. I have, more than once, accidentally made a patient cataleptic by pressing on the left ovary, and after knocking the left ovarian region against the corner of a chest of drawers, she remained cataleptic for many hours. A tall, handsome lady, in whom I noticed a failure in the power of attention and a frequent dreamy look of the eye, that she would shake off with a slight twitch of the body and jerk of the head, had been married several years, and was anxious for a family. Finding an undersized womb and a contracted cervix, I dilated it, and although this gave no pain, ten days after all treatment had ceased a violent hysterical attack came on, catalepsy ensued and frequently recurred during the following fortnight. There was considerable pain in both ovarian regions, and as this abated the patient got better. Opium was prescribed in suppositories by the rectum, and two grains of valerianate of zinc, with one-eighth of a grain of extract of belladonna were given every fourth hour. I learnt that when in Canada a cataleptic fit had occurred while the patient was

suffering from an abscess in the neck, and that more recently menorrhagia had twice brought on a similar attack.

One of those strangely constituted women who were made pythonesses in the olden time, and are now mediums or mesmerizers, had already suffered fifteen years, when, in her twenty-fifth, she consulted me. A host of nervous sufferings and uterine symptoms coincided with, and seemed partly to depend upon an inflamed and displaced womb. This had been recognized and treated, but as the cervix was ulcerated, I touched it with the solid nitrate of silver. This aggravated all the abdominal pains, and induced a cataleptic state, which recurred about the same time every evening for some days.

Indications.—There is generally something wrong in the substance or in the functions of the sexual organs in cases of catalepsy, so this should be corrected, while strengthening the system by tonics and soothing it by sedatives.

Epilepsy.—So many cases of epilepsy have been caused or intensified by deranged menstruation, by connection, pregnancy, or by ovario-uterine disease, that a wise practitioner will be on the lookout for these abnormal conditions, and do what he can to rectify them. Sometimes epileptic fits that had ceased, come back again at first menstruation, or assume an aggravated intensity at menstrual periods, sometimes epilepsy dates from puberty, and if Tyler Smith was right in stating that dysmenorrhœa always goes with epilepsy, the indication is obvious. Lady L——, when pregnant with her fourth child, saw one of her children's fingers crushed, she had for the first time epileptic fits at her confinement, and she continued to have them frequently. When uterine ulceration was detected and cured, the fits became less severe and less numerous, but occasionally occurred just after menstruation. Mr. Lawson Tait has cured epilepsy in a young woman by the gradual dilatation of an infantile uterus. In most cases of hysteria in the male, the sexual organs are implicated, it is sometimes so with epilepsy: castration has been recommended and ovariotomy has been successfully resorted to by Dr. Battey.

Indications.—I have already noted those relating to the reproductive organs, and the good effects of bromide of potassium on the nervous system of women were first exemplified by its having cured epilepsy occurring at menstrual periods.

Insanity.—Conolly, Ferrus, Esquirol, and Brierre de Boismont have noted diseases of menstruation and ovario-uterine disease as frequent causes of, or aggravators of insanity, and they agree that the prognosis is comparatively good in such cases, as also in puerperal insanity. Dr. Crichton Browne's [1] admirable lecture on hysterical mania completely favors the views I entertain respecting the influence of the sexual organs

[1] British Medical Journal, July, 1871.

of woman on her nervous system, for he says, "As the result of a large experience of hysterical mania, I am satisfied that it is *without exception* preceded or accompanied by some derangement of the reproductive organs, the existence of which is most frequently indicated by some alteration or obstruction of the menses. Even where, however, neither amenorrhœa, leucorrhœa, or menorrhagia can be discovered, other signs of disorder in the functions of the reproductive organs can be found, *if carefully looked for.*" The italics are mine, and they are intended to imply that this is not done by those who think the womb has no more to do than the liver with hysteria. I think the study of overlactation thoroughly exemplifies the views entertained by Dr. Crichton Browne and myself. The ganglionic nervous centre then becomes the seat of strange sensations; not pain, but a depressing, irritating, exasperating sensation, more difficult to bear than pain, depriving active women of all power of exertion, causing a despondency that stimulants and food scarcely alleviate; driving some mad, and many more to the verge of insanity. I have attended some, who could not dine with their children, for fear of the murderous thoughts suggested by the sight of knives; a wonderful proof of how much the ganglionic nervous centre is able thoroughly to disturb the whole working of the nervous system; and it does so, to a less degree, in some chlorotic women, in those who suffer from the change of life, and in the hypochondriasis and insanity of both sexes. All this I have more fully developed in another work.[1]

Pseudo-narcotism.—Modern pathologists have decomposed ophthalmia into several distinct diseases, and, in like manner, several distinct pathological conditions were written of under the name of hysteria. Pseudo-narcotism is one of these conditions, sufficiently distinct to be identified, for, like wine, the *quid ignotum* of hysteria may act on the brain by sharpening the intellectual faculties, or it may so oppress them as to cause various degrees of drowsiness. This state has been called aphexia, and socors otiosa, by Mason Good, and extreme cases have been published as hysterical coma and apoplexy. Pseudo-narcotism occurs chiefly in connection with first and last menstruation, and for a full account of it, I must refer the reader to the work just cited.

Indications.—To regularize the menstrual flow or to supplement its absence, at the change of life, by purgatives and bleeding. Tonics may be required both at puberty and at the change, and I may say the same of sedatives.

Spontaneous Orgasm.—With regard to the intensity of the sexual instinct, women may be divided into three classes. Many more than is supposed have little or no sexual feeling; and most of those who have consulted me on that account have thought that this might depend on

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[1] Ovarian and Uterine Pathology, and on Diseases of Menstruation, Third edition.

some physical imperfection, whereas, I have often found nothing to explain the fact, though, in a few instances, frigidity seems explicable by the small size of the clitoris. A second class of women, more numerous than the preceding, but small when compared to the sum total of the female sex, are more or less tyrannized over by sexual desires, and, if they do not marry, and are unrestrained by religion, education, social fetters, and hygiene, they are likely to go wrong. Women of the first class can no more form an idea of the strength of the sexual impulse in other women, than the blind can form to themselves an idea of colors; and when they judge of each other, as influenced by the presence or absence of sexual impulse, they often judge without the slightest knowledge of each other's motives. The third class comprises the vast majority of women, in whom the sexual appetite is as moderate as all other appetites. Nothing more forcibly shows the strength of the sexual instinct than what I have called spontaneous orgasm, of which I have met with several marked instances, in young widows, with hysterical antecedents, suffering from chronic uterine inflammation. They were pure-minded women, not readers of licentious books, and holding masturbation in horror, nevertheless they were sometimes awoke from sleep, or from half-sleep, by sensations somewhat similar to those experienced during connection, but full of pain instead of pleasure, this spontaneous orgasm of the reproductive organs being followed by an increase of vulvo-vaginal secretion. The mind was distressed, and the temper exasperated to the verge of mania on the following day; there was great prostration, and sometimes very alarming collapse of heart-power, and death was only prevented by the powerful and often repeated internal and external exhibition of stimulants. In one of these cases, during the husband's prolonged absence, my attention had been drawn to a considerable amount of ovario-uterine pain and abdominal distress and heat, without my having been able to find anything else amiss, which was soon followed by a bad attack of spontaneous orgasm and subsequent collapse. This explains why writers on hysteria have mentioned the occasional occurrence of death from failure of the action of the heart.

Indications.—Stimulants must be freely used, but brandy should be spared as much as possible, or else reaction may be followed by terrific vomiting. Leeches to the vulva gave temporary relief, and opiates were always useful; while injections with borax or acetate of lead have brought on this orgasm in two patients, who found relief from injections of linseed-tea and laudanum, from suppositories containing opium, from belladonna, given either by the vagina or by the bowels, and from the inhalation of chloroform.

Although refraining from dangerous questions, I have occasionally felt convinced that a young, virtuous, and unmarried patient was suffering in the same, and, to her, unaccountable way. This mental condition

will be fostered by luxurious feeding and stimulants, by soft beds, by licentious books, pictures, and conversation; but poor fare, hard beds, less sleep, active duties, and the influence of religion cannot prevent nature asserting itself, even in the convent cell, and the phenomena of *spontaneous orgasm* may have made many a nun consider herself the victim of Satanic influence. In many of these cases marriage may be judiciously recommended.

Masturbation.—Contrary to the belief of some pathologists, hysterical women may be frigid, but, on the other hand, in hysterical women lust often shows itself by masturbation. This is the result of mental reaction on sexual stimulus, mental activity of the lowest scale is sufficient, for idiots often masturbate, though they are seldom hysterical. Regarding the organic cause of masturbation, there is often nothing to be found amiss in the sexual organs, the congestion and inflammation of the vulva are as much the cause as the effect of the habit, but the desires that would otherwise lie dormant may be expected as symptoms of congestion, irritation, and subacute inflammation of the ovaries. I have found it an occasional symptom of chronic uterine inflammation, and in some very bad cases the habit was given up when the uterine disease was cured. Amongst the frightful cases of masturbation that have been recorded by Tissot and those who wrote during the last century, it is easy to detect the symptoms of organic disease of the womb, which it was not then possible to identify accurately. It is not masturbation that causes epilepsy, idiocy, and insanity, but epileptics, idiots, and the insane often fall back on foul practices to diversify the monotony of a miserable life. In confirmation of this view, I may mention that, out of fifteen cases of confirmed masturbation, I cannot recollect one instance wherein it coincided with epilepsy, insanity, or the more severe forms of hysteria; and if foul habits caused these diseases in women, how much more frequently would they be observed in men, who are much more given to masturbation than women, and in whom it is evidently a more powerful source of damage to the nervous system. Habitual masturbation lowers the whole tone of the system, causes an irritable condition of the temper, the milder manifestations of hysteria, and the gradual and the permanent impairment of the mental faculties.

Indications.—Religious training, a solid education, plenty of exercise, occupation, a hard bed, early rising, and the careful management of menstruation, will usually prevent masturbation being discovered by a child, and it is for her friends to see that the practice is not taught her. If the habit has been acquired, the first thing is to ascertain whether the sexual organs are in a healthy condition, and to cure what may be amiss. A wide-awake friend or nurse should sleep with the patient, exercise should be carried to the verge of fatigue, and the mind should be as much occupied as possible by pleasurable out-door pursuits. There is

much more to be done in this way than by medicines, but large doses of camphor, lupulin, and bromide of potassium have proved useful. Dr. Ellis, of St. Luke's, depends greatly on the applications of ice to the clitoris and the adjacent parts, for an hour at a time. At the Hôpital de l'Ourcine, there is a ward for little children addicted to masturbation, and part of the treatment consists of applying nitrate of silver to the vulva, in order that pain might be found by those in search of pleasure. An occasional flogging might be tried as a deterrent with the young, but besides the debasing effect of corporal punishment, if applied to the seat it might defeat the intended object. Indeed, it is singular, that in total ignorance of the theory of reflex nervous action, holy people most anxious to extinguish the lusts of the flesh should have actually hit upon the plan resorted to by the most depraved of debauchees to awaken the smothered embers of desire.

Clitoridectomy has been always recognized as a justifiable operation when the clitoris by its unusual size could scarcely fail to lead to masturbation. It was usual to remove the clitoris with the knife, and the actual cautery was applied to check the flow of blood. I have, however, cited a case in which this was done without preventing masturbation. Clitoridectomy has been lately proposed as a panacea for the nervous complaints of women, but there are no facts to warrant the assumption or to justify the practice, and the operation must still remain one for the cure of masturbation, and is only justifiable in a very limited number of cases. Formerly the operation was never performed except when the clitoris was much enlarged, but the results of late discussions lead me to sanction the removal of the clitoris, even if it be no larger than usual when masturbation has resisted all other measures, and when it seems to aggravate hysteria or epilepsy. The mode of action of this operation is not quite so simple as it would seem to be; for, besides the removal of the chief seat of pleasure, there is the shock of operation and the irritation and suppuration of the healing surface during the following month.

Ovariotomy.—The profession in America favor the plan of removing the ovaries, when incurable subacute ovaritis is leading to insanity: how far this be justifiable, will be discussed when ovaritis is under consideration. It may be already observed that although sexual feelings are generally absent when the ovaries are congenitally absent, ovariotomy did not extinguish desire in some of Dr. Battey's cases of ovariotomy.

Indications for using Sedatives.—When called on to treat the nervous affections thus briefly spoken of, or many others that have no name, it is well to acquire the habit of classing the sedatives that may be required according as they act more specially on the cerebro-spinal system, or on the ganglionic nerves or on the sexual organs of women, so I shall note these several indications.

1.—*Cerebral Indications.*—In the many nameless disturbances of the

nervous system, as well as those generally termed *hysterical*, I always begin by prescribing the bromide of potash or of ammonium, and I give from ten to fifteen grains at four o'clock, and from twenty to thirty at night. I continue this for a fortnight, and then I only give the night dose. I have thus given forty-five grains of bromide of potash for several weeks to a host of women, with very marked benefit, and without having found it disagree, otherwise than by producing the well-known eruption on the face. This has occurred very seldom in my practice, always in young women, never in women at the change of life. Extract of hyoscyamus in three-grain pills, given thrice a day, is very useful; musk, castor, ambergris, sumbul, and particularly the preparations of valerian, are useful in a host of those anomalous symptoms of cerebral disturbance which are caused by uterine disorders. In bad hysterical fits it may be necessary to give two or three grains of acetate of morphia, and to repeat the dose until the remedy begins to tell on the disease. In like manner, acetate of morphia may be given, irrespective of dose, to quell intense pain, but before resorting to these large doses, it would be better to try the hypodermic injection of smaller doses.

In severe headache, megrim, and hemicrania, which so often occur in connection with diseased menstruation and uterine affections, it is good to sponge the head, once or twice a day, with cold vinegar, or eau de Cologne and water, and after half-drying the hair, to rub in, for five minutes, sweet oil, or any pomatum the patient may prefer. Bathing the nape of the neck with very cold water for several minutes, the application of a lump of ice to the same place, or dry cupping-glasses. If these refrigerant measures do not relieve, hot flannels or sponges should be applied to the forehead, and a mustard poultice to the nape of the neck, or a hot linseed-meal poultice, sprinkled with either laudanum or powdered camphor. When there is great excitement, I have the head sponged with water, holding in solution two to four ounces of camphorated spirits of wine to the pint, with the addition of a little eau de Cologne or lavender water. Camphorated vinegar and water, or water in which camphor has stood, or the compound camphorated liniment well diluted, are excellent remedies. This last has been sold as "Ward's essence for the headache;" but a still better preparation is Raspail's sedative lotion, which will be found in the Formulary. This lotion may be used with a small sponge, or a pad of soft linen may be soaked in it, applied to the painful part of the head, and renewed as often as may be required. It reddens the scalp, causes burning sensations, and sometimes an eruption; its action can be lessened by diluting it with water, but in severe cerebral affections, a handkerchief should be tied round the forehead, to prevent the liquid running into the eyes, while copious spongings are made to the head of the reclining patient. Tincture of aconite is useful, rubbed into the nape of the neck, or applied by means of lint and oil-silk. Cold cream

should afterward be rubbed into the scalp, or cold cream, with one drachm to the ounce of camphor, and two drops of the essential oil of bitter almonds. In pseudo-narcotism amounting to stupor, in addition to other means, I have rubbed into the scalp eau de Cologne, with as much camphor as it would dissolve. In a case in which these attacks of stupor frequently followed the epigastric pain, this was my only treatment during the attack. On recovering her senses, the patient felt as if her brain were "benumbed," and then succeeded a sensation of internal pricking, like "pins and needles;" when this was complained of, I wrapped the head in flannel, and let the patient lie quiet. If instead of being cool and feeling benumbed, the head is hot, painful, and the patient excitable, these stimulant applications are of no use, or do harm.

2.—*Ganglionic Indications.*—There are several conditions depending on the ganglionic nervous system, which can be controlled by the local application of opiates. When the patients complain of epigastric uneasiness, sinking and faintness, I ascertain whether the sensations depend upon foul secretions requiring purgatives, I then order a sedative mixture before meals, an alkaline after; three grains of blue pill and two of extract of hyoscyamus at night; and as an application to the pit of the stomach, a mustard, or a hot linseed-meal poultice, sprinkled with coarsely powdered camphor, every night. I used to order a succession of belladonna plasters, but they smell, and feel nasty, and interfere with ablutions, so I now order a bit of piline, *not spongio-piline*, to be worn all day next the skin, at the pit of the stomach. From twenty to forty drops of a strong spirituous solution of atropia and morphia are to be sprinkled on the soft side of the piline, or a bit of "therapeutic lint," which is sold by Messrs. Maw. If there be sleeplessness and nervous irritability, I give the bromides as above stated, or from five to ten grains of Dover's powder every, or every other night; or the twelfth of a grain of acetate of morphia, every one or two hours, until the induction of drowsiness. If, besides the sensation of prostration, there be downright pain, resisting the local means previously detailed, I have sometimes, with benefit, applied chloroform to the pit of the stomach. These distressing sensations are associated with more or less debility, requiring generous diet and tonics. A patient suffering from internal metritis and neuralgia of the abdominal parietes, took from three to four grains of acetate of morphia every day, for many years; it diminished the pain, but induced little sleep. Another took one grain of acetate of morphia and one of opium every four hours, for six weeks, and was thereby quieted, but had very little sleep. I have seen patients driven to the verge of insanity by ovario-uterine excitement; and in proportion as it was assuaged by the systematic exhibition of sedatives, cerebral disturbance abated. Those most benefited by sedatives are the nervous and chlorotic, in whom action is without power—action requiring to be restrained until the system has gathered strength;

and, as the tolerance of a remedy is generally in direct proportion to the extent to which it is required, the thin, weak, and nervous are more amenable to the action of sedatives, and can be brought to tolerate the largest doses. Those of plethoric habit bear the solanaceous sedatives better than opium, unless this be taken with ipecacuanha and purgatives; and calomel or blue pill should be occasionally combined with the sedatives required by women of a bilious tendency. These observations apply to sedatives *internally* exhibited; but as their poisonous effects are often felt before the local sufferings are appeased, their application to the seat of pain is often required for complete relief.

3. *Ovario-uterine Indications.*—When nervous affections are caused by uterine disorders, sedatives should be administered to the womb and to the lumbar region, which is the genito-spinal centre of reflex action, for it supplies nerves to the sexual organs and to the bladder. Sedatives may be then exhibited by the vagina or the rectum, and, by means of the speculum, I have occasionally left a pledget of cotton-wool, soaked in laudanum, or some liquid containing acetate of morphia, near the neck of the womb, when the pain is very severe. Aran extensively followed the same idea, and he dropped one or two drachms of laudanum into the speculum previously introduced, solidifying the fluid in the vicinity of the womb by a tablespoonful of powdered starch. Aran repeated the application every second day or every day, and he found it effectual in cases of uterine or ovarian neuralgia subsequent to inflammatory affections or complicating uterine deviations, and in those singular and painful conditions of the womb which occur at the change of life.

About ten years ago, I was asked to see a lady residing a few miles from town. She was married, about thirty, of diminutive stature, nervous temperament, dark complexion, and reduced to extreme emaciation, having been confined to her bed for several months by an excruciating pain in the back and in the lower part of the abdomen. The pain was constant, but with paroxysms most violent at the menstrual periods. The flow was scanty, and there was a purulent vaginal discharge. She had slept but little for many months, and could scarcely digest any food. The pain in the back was so intense that the late Mr. Lonsdale had been consulted, and he is said to have called the case one of "hysterical spine." On examination, I found the womb exquisitely sensitive, its neck considerably swollen, with a considerable amount of ulceration round the os uteri. Three leeches were applied to the womb, and they led to great loss of blood and increase of pain. I touched the ulcerated surface twice with the solid nitrate of silver, and afterward with its strong solution, at four days' interval; cooling injections were used, and, in a few weeks, the ulceration had healed, the uterine swelling had diminished, but the habitual pains had but little abated, for rectal injections could not be retained. I therefore placed one grain of acetate of morphia in a little cotton-wool,

tied a piece of twine round it, and applied it close to the neck of the womb, leaving the piece of twine protruding, so that the patient might withdraw it the following morning. Three days afterward I applied two grains of the morphia salt in the same way, and on the fourth day three grains. After this application there was a sudden abatement of the pains, and so great was the improvement, that the lady, who for months had only been able to crawl down-stairs, to be carried back to her bed, was able to sit upright for several hours, and was not over-fatigued by a two hours' drive. This sudden amendment continued, so that in a few weeks she was able to leave for the sea-side, and she so far regained her health, as to be able to take an active part in the superintendence of a large paper manufactory. I saw nothing of her for six years, when her general health breaking down, under the influence of over-work and mental distress, there was a mild relapse of uterine disease, and I again found the application of acetate of morphia to the neck of the womb very serviceable.

When I have had to do with tractable patients, I have seldom found this treatment fail in cases of uterine neuralgia. Once, when I resorted to it in a case of pregnancy, it brought on a severe paroxysm of tenesmic pain, which subsided on the removal of the cotton-wool. This patient continued to suffer until delivery, and I think pregnancy would not have gone its full time if the tincture of Indian hemp had not mitigated the pain. In a case of internal metritis, a grain of acetate of morphia given in this way turned nausea into vomiting without diminishing the uterine pains. In a similar instance, one grain of acetate of morphia thus applied produced all the symptoms of an over-dose of opium; the sickness became worse, the pupils contracted, the mind wandered, and there was great irritation of the skin. Becquerel has had morphia, codeia, atropia, etc., made into sticks, like those of nitrate of silver, with powdered gum and a very small quantity of castor-oil, and he introduced them into the neck of the womb. It is admitted that dysmenorrhœa may be caused by inflammatory conditions of the ovaries and womb, by fibroids, by uterine malformations, and by stricture of the cervical canal, but it is most erroneous to assert that there can be no dysmenorrhœa so long as the cervical canal is straight, and wide enough to afford free passage to the menstrual blood. Even when this is the case, I have often found menstruation to be very painful. In rare instances this may be referred to a gouty or rheumatic taint of the system, but, in general, constitutional dysmenorrhœa seems to me to depend on some derangement of their nervous endowment in imperfectly vitalized sexual organs; a condition that may cause neuralgia or spasm. Many reasons militate in favor of the belief in spasmodic stricture of the womb. The belief has, in the first place, a physiological basis, in the fact of circular muscular fibres entering largely into the structure of the cervix; and there is no good reason for

denying to them the liability to the same morbid contraction which constitutes spasmodic stricture of the œsophagus, of the urethra, and of the rectum. Besides this, the inner portion of the body of the womb is separated from the cervical canal by the muscular ring of the os internum, which is just as liable to spasm as other muscular rings.

We often bring on spasm of the cervical muscular fibres by roughly introducing a cold uterine sound; whereas, if previously warmed, it passes without difficulty. We sometimes induce a spasmodic state if we blunder in our first attempt to pass a wax bougie through a strictured cervix. For spasm of the rectum, it is recommended to leave in the passage metallic suppositories; and I have occasionally found that the presence of a foreign body in the cervical canal has deadened its sensitiveness. The evidence of spasm as a complication of stricture is shown by the efficacy of anti-spasmodic treatment. The great utility of opium, henbane, or belladonna, either given internally, or as suppositories by the vagina or rectum, during the first twenty-four hours of menstruation, has been taught by the great men who preceded us; and by this mode of practice I have repeatedly enabled patients to menstruate with little or no pain who would otherwise have suffered greatly, because it was difficult to introduce a No. 2 bougie into the cervical canal. In many of the cases of constitutional dysmenorrhœa, the uterine sound passes freely through a straight canal; still the pain of menstruation is intolerable, and it may often be relieved by large, hot linseed-meal poultices, sprinkled with a dessert-spoonful of laudanum, being applied to the abdomen every two hours. When pain is habitually severe, at each menstrual period one hypodermic injection of a solution of morphia will often be sufficient. If opiates are to be taken by the mouth, they should be given soon after menstruation begins, for it is much easier to obviate than to relieve pain. Squire's solution of bimeconate of morphia is a very good preparation, and from five to ten drops may be given, every three or four hours, until the abatement of pain. This is only a new form of the same drug, for Fothergill, Petit Radel, and Dr. Gregory long since gave, for painful menstruation, a pill composed of a grain of thebaic extract, every hour until the pain abated. This facilitating of the menstrual flow by opium reminds one of the utility of opium in intestinal obstruction, still too frequently treated by drastics.

A suppository containing two grains of opium, passed into the rectum when pain sets in, is the best way to quell it; one suppository often suffices, but a second may be necessary. I now omit the extract of belladonna I used to add to the opium, because the opium suffices, and the belladonna often affects the eyes and dries the throat.

On the Administration of Sedatives.—We have no sedative that acts exclusively on the cerebro-spinal, or on the ganglionic nerves; we have no sedatives endowed with specific action on one set of organs only,

so that to medicate the part we must influence the whole system. There are many ways by which we are to direct the chief action of sedatives to the diseased tissues and their offended nerves, so that when it is urgent to give sedatives two questions ever arise: What dose does the disease require? What does the system bear? and in many cases the complaint requires enough to poison the system. Neuralgia can generally be cured by the abatement of the originating disease, though it often specially calls for sedatives; and then the question arises, whether they should be exhibited, so as to act first on the system, or whether they should be directed to the seat of pain. Doubtless a strong opiate, fully affecting the nervous system, may remove the pain localized in some well-circumscribed spot, but in many cases it only procures a small abatement of the suffering, and the same dose cannot be repeated sufficiently often to cure neuralgia, without entailing an undesirable state of semi-narcotism. For these reasons, when sedatives are used in neuralgic affections, they should be applied as near as possible to the seat of pain, which should be rubbed with sedative ointments and embrocations; and they should be left on the skin, so as to envelop the extremities of the sentient nerves in a sedative atmosphere. Opiates are applied to the denuded skin, and are often injected, with benefit, into the tissues surrounding the agonized nerve. This principle should be followed in the treatment of diseases of women, for if a patient suffer habitually from nervous and uterine irritability, from bearing-down pains, vesical tenesmus, and severe pains in the sacrum and thighs, the necessity for sedatives will strike every one. Many medical men give them by the mouth, either in such moderate doses that it will take long to abate the patient's sufferings, or, should the quantity be sufficient to assuage the pain, the drugs may act so thoroughly on the system, that it will take some days to recover from their poisonous effects. If sedatives had been given by the rectum, relief would soon have been afforded, without any subsequent ill effects, because the remedy being applied in close vicinity to the diseased nerve, the dose could be proportionate to the intensity of the pain. Sir H. Holland observes that "where true inflammation has been removed, and where irritation or nervous sympathies are the sources of the distress that is attached to the spine and limbs, it is singular what good may be effected by opium, externally applied, not however in the careless and inefficient way which is common with external remedies, but sedulously, and with a sufficient proportion of opium in the forms employed." This is perfectly true of the pains that survive the cure of uterine disease. They often make life miserable by their intensity and their long duration, and it is possible to remove or greatly diminish them by administering sedatives, in fomentations, lotions, liniments, ointments, plasters, and suppositories. This has been stated in the preceding chapter, whereas the hypodermic mode of giving sedatives will be explained in treating of opium.

Sedative Drugs.

Chloroform.—Chloroform has been given to solve the spasms of the abdominal muscles, and to cause the sudden collapse of what was at first supposed to be an ovarian tumor. I have been told by my friend Dr. Duncan Stewart, that in dysentery, which in India so often causes miscarriage and death in childbed, the inhalation of chloroform, so as to affect the brain without producing insensibility, has been found invaluable when other remedies have failed to allay the unconquerable instinct that impels patients to waste their failing energies in useless efforts. I have followed the same plan to relieve tenesmus, whether it affects the womb, the bladder, or the rectum, and also for vaginal pruritus when very distressing. I have likewise ordered it in a variety of anomalous cerebral symptoms of a neuralgic character, with excellent results. One or two drachms of chloroform can be poured on the corner of a pocket-handkerchief and held to the patient's nostrils, to be withdrawn on the first intimation of loss of consciousness. When the patient has recovered her senses, another dose of chloroform can be given in the same way, and so on, until violent pain or intense nervous exasperation be subdued, and the patient be quiet and inclined to sleep. In this way I have quelled, in twenty minutes, cerebral symptoms that had lasted for hours, and had been made worse by opiates and other remedies; but no patient should be trusted with pure chloroform. Chloroform often soothes when given internally at night, thirty drops in an ounce of acacia mixture, or in drops, when combined with tincture of lavender, and aromatic spirits of ammonia, twenty drops of which in a little water makes a good "pick me up." Alone, it forms a good topical application, a small piece of lint being soaked in it, applied to the seat of pain, and carefully covered with oiled-silk. It forms a capital ingredient of liniments; and what is sold as soluble camphor, or three parts of camphor dissolved in one of chloroform, is a good external remedy. Another preparation has been lately introduced, called gelatinized chloroform, which is made by pouring into a bottle two parts of the white of an egg and one of chloroform. It is dangerous to trust a patient with chloroform, for more than one death has been the result of a bottle of chloroform becoming uncorked in the patient's bed. A mixture of equal quantities of chloroform and spirits of wine is not open to the same objection. Dr. Head stated that dysmenorrhœa is to be cured by the injection of chloroform vapor into the womb; but this was most likely one of the many shooting stars of therapeutics, for we have not heard anything about it for the last ten years.

Chloral.—This drug is simply invaluable, and I have not found it necessary to give more than twenty grains as a dose, at night; and a

favorite way with me, is to give, at night, five or ten grains of chloral, with fifteen or twenty grains of bromide of potassium.

Opium.—What has been already stated, shows that one cannot too highly estimate the value of this wonderful remedy. Its various preparations suit the many varieties of constitution, and the facility of their combination with other remedies, such as mercury, ipecacuanha, and mineral acids, renders it available in the treatment of many diseases. For internal exhibition, I generally give minute doses of the salts of morphia, sometimes large doses, and it is wonderful how little harm their long-continued use does to some persons. A lady, to whom I was obliged to prescribe three grains of acetate of morphia a day to quell the pain of acute metritis, continued to take the same dose for five years, notwithstanding my desire that she should leave it off. This daily dose produced none of the distressing effects of opium-eating; it merely kept in check pelvic pains, sometimes causing cutaneous irritation, but the bowels never acted without enemata. During the last year, this patient has suffered much from heartburn, and has reduced the daily allowance of acetate of morphia to a grain and a half. I sometimes give the comp. ipecac. powder, or twenty minims of the solution of hydrochlorate of morphia, with twenty minims of ipecacuanha wine, which is equivalent to ten grains of Dover's powder. I have found Dover's powder invaluable in some cases where I had long refrained from prescribing it, on account of the prevalence of nausea, which it did not, however, increase. Battley's solution and the bimeconate of morphia need only be mentioned, and the aqua opii of the Berlin Pharmacopœia is said to soothe without irritating. I have already mentioned the various ways in which opium may be brought to bear on neuralgia, and on inflammatory diseases of the womb and its surrounding tissues. In hæmatocele, the external and internal exhibition of opium, until narcotism is produced, sometimes quells the vomiting, the nervous excitement, and the morbid impulse which impels the blood from the organs of reproduction. Should an ovarian abscess burst in the peritoneum, the consequences must be combated by large doses of opium, as Stokes and Chomel have recommended for intestinal perforations—a plan of treatment which Graves found successful in a case of abscess of the liver which burst into the peritoneum.

Hypodermic Injection.—It is unnecessary for me to describe this well-known method of giving opium, and if the hypodermic injection has been very painful, either the instrument was blunt or the operator awkward, for, if instead of passing the needle perpendicularly through the skin, it is made to burrow through the substance of the skin, great pain will be given.

When morphia is to be injected under the skin, the acetate of morphine should be rubbed up with just sufficient diluted acetic acid to render

it clear, adding hot distilled water until one drachm of the solution contains ten grains of the acetate. The solution should be carefully neutralized with liquor potassæ, as its acidity is apt to give rise to troublesome irritation, while no other local effects but a slight and transient tingling have been found to follow the injection of the neutral solution. Different samples of this drug, even from the same laboratory, are found to vary in the amount of acid required to make a clear solution; the color of the solution, when first made, should resemble that of pale sherry; the solution becomes darker and acid by keeping. The gelatine discs sold by Savory & Moore are very convenient to carry about. They contain one-sixth of a grain of morphia in each, which is a safe and efficient dose for most cases, although in some, it may be well to begin with a less amount, and in many it may be advisable to increase the dose considerably. It seems to be well ascertained: 1. That in neuralgic cases, equal effects follow distant and local injections. 2. That by distant injections, in various places, the ill-effects of repeated local injections are avoided. 3. That medicines act more rapidly when thus injected. 4. There is the certainty that the remedy will not run the risk of being decomposed by food, secretions, or fæces, as may be the case in the digestive tube. 5. There is the possibility of introducing *safely* into the circulatory system a much larger dose than by other methods. This last advantage is the principal one in favor of the hypodermic method against neuralgia, and explains how neuralgic patients, who had taken apparently large doses of narcotics by the mouth, without either permanent or temporary marked benefit, are sometimes completely cured by one or several hypodermic injections of narcotics. The initial dose, under ordinary circumstances, for a woman, is from one-eighth to one-sixth of a grain of morphia. In a case communicated to the Committee of the Medico-Chirurgical Society, alarming symptoms have arisen from the injection of one-fourth of a grain in one woman; and another woman, suffering from sciatica, who had had a grain of acetate of morphia injected, at the Western Dispensary, walked home, to die that evening. A few other cases of poisoning due to the injection of morphia have been related, but from six to eight grains have been daily injected, for a considerable time, in cases of cancer, with only the effect of lulling the pain.

This remedy may be abused, like any other, and occasionally large doses are well borne for a long time; witness a lady, who for seventeen years, off and on, has had morphia injected into her arms. Three-quarters of a grain of acetate of morphia were injected every day for five years, and one grain every day for a whole year. Dr. Henry Bennet and Dr. Hughes Bennett have repeatedly tried to break her of the habit, but the occurrence of great prostration, with vomiting and diarrhœa, made them sanction a return to the use of the remedy. I have repeatedly seen this lady lying inanimate, with hippocratic face, cold clammy skin, the pulse

scarcely perceptible, and unable to keep down food, whereas, five minutes after I had injected a grain of morphia the pulse could be felt to fill and to quicken, the skin would warm, the face brighten up, the voice would return, and food could be kept down. This patient had at last the courage, and was able to give up the morphia. On no account should a patient be allowed to self-inject a solution of morphia, for it has been a well authenticated cause of death.

Castor.—Musk, castor, and sumbul are useful remedies, although some will think them ill-placed among sedatives. Castor was given, by the rectum, by Aretæus, and although an old remedy, it holds its ground in the new Pharmacopœia. Ambergris resembles castor, and is much used by perfumers; it is mixed with haschish by the Turks, and Brillat Savarin's eulogium of its effects made me try it. I give ten or twenty drops of the tincture in a six-ounce mixture, and it certainly acts as a good diffusible antispasmodic.

Valerian.—This remedy still holds its ground, and the best preparation is the valerianate of zinc, of which I begin by giving a grain two or three times a day, combining it with two grains of henbane, or a quarter of a grain of extract of belladonna, in convulsive nervous affections associated with uterine diseases. It is well to begin with small doses, for all the salts of zinc are liable to cause or increase nausea.

Apiole.—The essential oil of parsley, sold in capsules, and given every two hours as soon as pains of dysmenorrhœa begin, has acted like a charm in some cases of nervous dysmenorrhœa; but I have found it of little use when dysmenorrhœa depended on disease of the womb. Indeed I am afraid it no longer cures, for I never hear it mentioned.

Hydrocyanic Acid.—This sedative suits many patients, and I frequently give it, or the cherry-laurel water, to quiet general excitement, pain, and sickness, but its action should be carefully watched, for it may very much aggravate cerebral neuralgia depending on a low state of the system.

Digitalis.—The well-known action of this remedy over the circulation explains its utility in menorrhagia, as well as in any other active hemorrhage. Half-drachm doses of the tincture and of the liquid extract of ergot, given two or three times a day, is my favorite remedy in menorrhagia without appreciable organic disease. I have known one dose to check the flow, and I have found no inconvenience from giving the above mentioned dose three times a day for three days. In one desperate case of habitual menorrhagia it only moderated the flow, which I had to check by ice introduced into the vagina. I doubt whether digitalis has any special sedative effect on the sexual system, still Brugmans estimates its influence on the generative organs of man as very powerful; and that when taken for four or five days it induces complete flaccidity and loss of all virile desires. Dr. Stadion, of Kiew, also gives as one of the re-

sults of his experiments, "that digitalis is an energetic depresser of the generative system, and may for a time abolish all sexual desire."

Veratria.—I only prescribe it as an external application in neuralgia; internally it acts like digitalis, but more powerfully. A patient who suffers intensely from abdominal pain, the result of uterine chronic irritation, tells me that nothing gives her so much relief as the oil of veratrum viride applied to the skin. Given internally it quells priapism.

Aconite.—The tincture of aconite is quite strong enough for medical purposes. Lint soaked in it, diluted with equal quantities of water, or even undiluted, may be applied to the seat of pain and covered with oiled-silk; I do not use it, except when other remedies lose their effect, but it is a valuable ingredient of liniments. I have seldom prescribed aconite internally, but it has been recommended by Dr. Marotte for menorrhagia, when it does not depend on organic disease of the womb; he, however, gave so untrustworthy a preparation, that his assertions require confirmation, and I must mention that a friend nearly poisoned a patient with ten drops of the tincture of aconite of the London Pharmacopœia, given by the rectum. The subcutaneous injection of *Aconitia* was tried in three cases of neuralgia; but the local tingling which followed was so severe, that the drug was considered unfit for this purpose.

Belladonna.—The dread of the singular hallucinations which it produces when taken in poisonous doses, has too much prevented the internal exhibition of a valuable drug. A knowledge of the beneficial results obtained in epilepsy by Dr. Debreyne, led me to give it in its kindred affection, hysteria, and I prefer the fresh extract of belladonna for internal use, beginning with a quarter of a grain twice a day. The French have long added some of the extract to purgative pills, to ensure their better action. Atropia, in doses of one-fortieth of a grain, is reputed a nerve stimulant, but the drug is mostly used as a sedative, and those who give it internally should remember that life has been endangered by the sixtieth of a grain of valerianate of atropia, given three times in thirty-six hours. I only give belladonna in suppositories, associated with opium, when I find the latter insufficient to relieve uterine spasm and pain, because the dryness of the throat and impairment of vision uselessly distress a patient. It is the extract of belladonna I use, because it is more manageable. Some years ago, a patient continued to suffer from uterine neuralgia after the subsidence of inflammation, and I ordered suppositories to be made, so that each might contain one-sixteenth of a grain of sulphate of atropia. Unfortunately I made the 1 with a little side-stroke, and a chemist's assistant, in a large provincial town, made the suppositories to contain seven-sixteenths, or something under half a grain of the drug. At night the lady put one of these suppositories into the vagina, and some time afterward, feeling very uncomfortable, she got out of bed to ring the bell,

tottered, fell down, and was found on the floor unconscious. The lower limbs were half paralyzed for several days, during which she neither saw nor remembered; she then gradually recovered, and was cured of all uterine neuralgia. This is the account given me by a very intelligent patient. I wrote for particulars to the medical man who was called in on the night of the accident, but he actually refused to give me an account of the mishap that had occurred to my own patient. I may add that my prescription was submitted to all the other chemists of the town, and their unanimous verdict was, one-sixteenth of a grain. Some patients are obnoxious to the use of belladonna. A thin, unmarried lady, who suffered much from pain due to chronic inflammation of an anteflexed womb, owed three days of misery to a belladonna plaster applied above the pubis, where it brought out an eruption. Some time after, I ordered the same lady a rectal suppository, containing one grain of extract of belladonna and one of opium. This was followed by a most distressing attack of follicular vulvitis. Not believing that this could have been caused by the belladonna, on another occasion I repeated my injunction with the same painful results, and they must have been due to the belladonna, for the patient is often relieved by adding laudanum to the injections.

A study of the physiological action of belladonna has led Dr. Harley to regard the drug as a direct and powerful stimulant to the sympathetic nervous system, or, in other words, to the heart, and by virtue of its stimulant action on the circulation, it increases the oxidizing processes within the body. Belladonna has also a diuretic tendency. Dr. Harley's researches are conclusive as to the fallacy of considering belladonna to be the antidote of opium, and he has explained how, by combining opium and belladonna we intensify the action of both drugs, and do away with some of their injurious effects, a satisfactory explanation of the utility of combining opium and belladonna in pills, morphia and atropia in suppositories, ointments, and liniments. Externally used, I believe belladonna to be the best remedy we possess against tenesmus, whether the womb, the anus, the urethra, the nipple, or the eyelid be the seat of forcing action. I have applied cotton-wool soaked in a solution of sulphate of atropia to the neck of the womb to quell the forcing pains of uterine tenesmus.

In cases of simple neuralgia, atropia, administered by hypodermic injection, is a very valuable remedy; and in some cases where morphia procured only temporary relief, the benefits derived from atropia injections were permanent. Very decided results were observed to follow the use of minute doses of this drug used in this manner, but a much larger dose should be given in cases of severe neuralgia, for the most satisfactory results were found to follow when decided toxical effects were manifested. The discomfort, the excitement, the dry mouth, and the oc-

casional disagreeable action on the bladder experienced during the action of this drug, present, however, a considerable hinderance to its frequent use. The cases in which atropia was used with advantage were those of local neuralgia, lumbago, and sciatica. The initial dose is the eightieth of a grain for a woman, and the sixtieth for a man; but in cases of severe neuralgia, larger doses may be taken with safety. The largest dose given was one-tenth of a grain.

Indian Hemp.—This is a wonderfully useful drug to quell neuralgia, mental excitement, and headache. When it agrees, and it often agrees when opium is not tolerated, it does not constipate, and it is said to be, with chloroform, the principal ingredient of chlorodyne. I give Indian hemp in pills, beginning with a quarter of a grain and gradually increasing the dose up to six grains, then the dose is to be gradually diminished. The action of the drug varies very much according to the establishment where it is dispensed.

Henbane.—Although I do not give it so often as when the sedative properties of the bromides were unknown, I retain my full faith in henbane to quell the cerebral and ganglionic disturbance brought on by diseases of the sexual organs. In hundreds of cases I have known a three-grain pill of the extract, taken three times a day for a few days, to effectually quiet the nervous system and give sleep. I have often continued their administration for weeks with great benefit, and I have never seen them do harm. This teaching of a long practice is explained by the trustworthy researches of Dr. Harley, which go far to prove that in its action upon the system, hyoscyamus is intermediate between opium and belladonna, possessing, on the one hand, powerful somniferous properties second only to opium itself, and on the other, when given in larger doses, an influence upon the sympathetic nervous system secondary only to that possessed by belladonna itself. Compared with belladonna, it is distinguished by a preponderance of deliriant or somniferous properties. Compared with opium, it may be said to agree very closely with that drug in its cerebral effects, provided we take a wide view of the operation of both medicines upon the system; on the contrary, its influence upon the pulse, upon the mucous membrane of the mouth, and upon the pupil, place it in strong contrast with that drug. In addition to its cerebral and sympathetic effects, henbane has a powerful depressant influence upon the motor function, and thus comes into relationship with opium. It seems proven that opium prolongs and intensifies the effects of hyoscyamus, even to producing an acceleration to the pulse, some fifteen or twenty beats, for an hour or more; and that hyoscyamus increases the hypnotic action of opium, and, to a certain extent, is able to prevent the derangement of the vagus nerve, which is frequently the first effect of opium. Moreover, opium given in combination with hyoscyamus does not prevent the elimination of hyoscyamia by the kidneys. A fluid

ounce of the succus hyoscyami of the common tincture, or fifteen grains of good extract, are equivalent in effect, says Dr. Harley, to the fortieth of a grain of sulphate of hyoscyamia injected under the skin. I must, however, maintain my belief that smaller doses are sufficient for the purpose in view, and that rather than give larger doses of henbane, it is best to combine it with opium or with Indian hemp.

Conium.—Of this historic drug, the extract was praised for the cure of uterine scirrhus by Stoërk, and by Dr. Tunstall for that of chronic inflammation of the womb. Reduced to their proper value, these assertions mean that conium has been found to diminish back pain and to be a sedative of the sexual organs. This is in accordance with my experience, and it is well to give conium in large doses when the back pain of uterine disease is unusually distressing, for Dr. Harley has ascertained that it acts on the corpora striata and the whole of the motor tract, and that as opium tranquillizes the over-excited brain, so does conium soothe and strengthen the unduly excited and exhausted centres of motor activity, acting rather as a tonic than as a depressing remedy. In all cases of irritability of the spinal cord, says Dr. Harley, and especially in cases of undue excitement of the sexual organs, the beneficial action of conium was very marked; but he observes that a dose of hemlock which falls far short of producing the peculiar physiological effects of the drug, is of no more use in the treatment of diseases to which it is adapted than an ordinary dose of quinine would be in the treatment of ague. Having satisfied one's self by careful observation of the patient, as to the quantity required to produce slight and transient giddiness, with a little weakness of the knees, the dose should be continued for a few days. The only reliable preparation of conium is the *succus conii* of the British Pharmacopœia; the initial dose for a woman is two or three drachms, and when once the physiological effects of the remedy have been obtained, it is not desirable to increase the dose.

Camphor.—Dr. Physick says that "camphor was made for women, with whom it always agrees, while it always disagrees with men." This is an exaggeration, for I have met with women with whom it has disagreed, and it often agrees with men. Its subtle fumes seem to spread like an aura over the nervous system, stimulating it to increased action, causing the capillaries to eliminate, with the perspiration, whatever it may be that oppresses the nervous system. The effect of this is a subsidence of pain, an increase of strength, and sometimes a sensation of excitement, the patient feeling lighter. Camphor seems to correct the toxic influence which the reproductive system has on the brain of some women; its anaphrodisiac properties have been often shown in priapism and nymphomania. It seems to abate the sexual sting, by acting on the cerebro-spinal nerves of the external organs of generation, not on the testicle or ovary. On this point the testimony of Raspail is of great value, for he

gave it, as a panacea, in very large doses, and he says that habitual large doses did not prevent conception or induce impotence. It is usually given in small doses, but Dumas, of Montpellier, gave, he does not mention how, one hundred grains in the course of a day. Raspail gave from five to ten grains in a wine-glassful of water, with or without a few drops of ether; I order it in this way, or I prescribe Sir J. Murray's fluid camphor. For external application, there is the camphorated oil, made with one drachm of camphor to one ounce of oil; the camphorated ointment, made with two drachms of camphor to one ounce of lard; and the camphorated vinegar, made by dissolving one ounce of camphor in a pint of vinegar, which is useful, when diluted with water, to apply to the head in headaches. A drachm or two of powdered camphor, sprinkled on a linseed-meal poultice before its application, will be found useful. If coarsely powdered and folded in cotton-wool, it may be worn as a sachet at the pit of the stomach, when it is the seat of painful sensations. Camphor may be incorporated with violet powder, and freely used to relieve the cheeks when flushes are dry and annoying.

Bromide of Potassium.—Since Sir C. Locock made known the value of bromide of potassium for the cure of epilepsy, when it occurs in association with menstruation, that remedy, and the bromide of ammonium, have been much lauded as sedatives. I have already given my testimony to the value of bromide of potassium, when taken in twenty-grain doses, two or three times a day, in any aromatic infusion, in all nervous affections of women that in anywise depend on sexual disturbance. It seems to have a double sedative action, and that Drs. Garrod and Sieveking are right in admitting its anaphrodisiac action, which explains why Dr. Brown-Séquard found it serviceable in dysmenorrhœa, nymphomania, spermatorrhœa, and incontinence of urine. Similar effects follow the use of bromide of ammonium.

Bromide of Camphor.—This remedy has been extensively tried on the Continent, and there is none I would more willingly have recourse to in an obstinate case of hysteric epilepsy, and whenever the sexual organs require an effective sedative. It has been found very useful to relieve symptomatic priapism, painful congestion of the neck of the bladder in man, and Dr. Sirédey found it useful in a case of severe vesical and anal tenesmus depending on peri-uterine inflammation. The best way to give this drug is in capsules, and each of Dr. Clin's contains four grains of the bromide. From one to eight may be given in the course of the day, but two, three times a day, is said to be an effective dose.

Bromide of Zinc.—Dr. Charcot has lately tried this drug, giving from five to twenty grains a day in pills or in a syrup, and he reports highly of it in troublesome nervous affections.

Iodide of Potassium.—It should be remembered that the protracted use of iodide of potassium has caused atrophy of the mammary glands,

and Dr. Alphonse Guérin has seen impotence caused by the daily exhibition of one or four grains of this remedy, during several months, for the cure of syphilis, sexual power returning on leaving off the iodide. In mentioning this to Mr. Bullock, he gave me to understand that he had long been aware of it.

Lupulin.—I formerly used to add six drachms of the tincture of lupulin to a six-ounce mixture; and German and French practitioners have found that, when from two to sixteen scruple doses of the yellow lupulin were given, it effectually quelled the erection of chordee. If these results are confirmed, it would certainly show a strong anaphrodisiac action, and justify its use in some diseases of women. On three occasions, at long intervals, a patient has obtained good sleep from taking a drachm of lupulin, made up into pills, in the course of the evening, after ineffectually trying to get sleep from the various preparations of opium and henbane. I nevertheless prefer to give the bromides.

Tobacco.—I have never given this drug, but in America it has been recommended for convulsive diseases of women in the shape of wine, of which each dose was equivalent to four grains of the leaf, this being given every hour until complete relaxation of the muscles.

Cold.—Cold is a model sedative, and half what I have said of its therapeutic value in diseases of women, in the chapter on tonics at page 72, would be equally well placed here. It is the sedative effect that we wish to obtain when we advise prolonged bathing in cold water, and the prolonged application of ice to cure congestion or neuralgia. In chronic inflammation of the womb, Aran used to introduce a large speculum, and to plug the vagina with coarsely powdered ice, after which the patient returned to bed, and this was repeated every day, or on alternate days. Some of his patients told me that it sometimes increased, for a time, their habitual pelvic pains, but in general it diminished them, at least for a few hours. I can understand the utility of the plan, but it is too disagreeable to be adopted. Dr. James Arnott had already suggested the utility of ice in cancer of the womb. It does not cure the complaint, but it often abates the intensity of the pain; I have also sometimes given ease by the application of a bag of ice to the ovarian region, when burning pain was complained of. This has been lately tried by Dr. Charcot, in the cases already alluded to, in which pressure to the ovarian regions checked hysterical attacks. The bag was left for half an hour, an hour, or an hour and a half, night and morning, with good results. M. Ferréol was equally successful in cases of ovarian hyperæsthesia, by leaving the ice-bag, for two hours, over the ovarian region three times a day. One case presented unusually severe symptoms, but was well in a fortnight.

Mesmerism.—Without discussing the physiological questions suggested by this word, I will mention that a patient of mine was mesmer-

ized every day for two months, for inflammation of a prolapsed and retroverted womb, without any effect. I can quite understand that the prolonged contact and gentle manipulation of one human being may irritate or soothe the nervous system of another, and even produce sleep. When travelling in the East, I have frequently seen slaves gently tickling their master's feet and legs, who were soothed by the procedure; and nothing quiets down mental excitement, in one patient, so much as having her arms tickled for an hour at a time by her sister or nurse. She remembers, when a little girl, having to do so for her father; and several of her aunts and uncles very much enjoy the same process.

Shock.—The occasional disappearance of toothache at the sight of the dentist's knocker, is a familiar instance of this. Pain may be cured by acupuncture, platinum needles being introduced so as nearly to graze the bone, and left in a quarter of an hour. For centuries, sciatica is said to have been cured in Corsica by the cauterization of the helix of the ear; and the late Professor Malgaigne convinced himself that the application of a white-hot iron to the ear sometimes speedily cured sciatica. The passing of a sound has cured neuralgia of the neck of the bladder; and in a case cited by Malgaigne, a woman was suddenly cured of all her sufferings by the application of the intra-uterine stem-pessary, though the deviation still remained the same. Jobert de Lamballe has published several cases of long-continued distressing uterine symptoms, without any apparent structural change, in which a cure was affected by applying the red-hot iron to the neck of the womb.

Aquapuncture, that is the hypodermic injection of one or two teaspoonfuls of *water*, near the seat of pain, might be useful in cases of obstinate back pain, due to uterine disease, which will not yield to more rational treatment.

CHAPTER VI.

ANTIPHLOGISTICS.

As in the early part of this century there were pathologists who considered that all diseases were caused by inflammation, so there are some who now look on inflammation as a pathological curiosity of extremely rare occurrence, and requiring no treatment. In religion, politics, and medicine, certain words assume a despotic sway; for a time they deprive us of reflection, and impel us into a practice founded upon one-sided views. I have already commented on one of those words, hysteria; inflammation is another, and rivers of blood have been uselessly or perniciously shed. On that account it seems good to reactionists to bow inflammation out of their works; but the phenomena represented by the word are too real, and of too frequent occurrence, to be so easily expelled from the field of practice. Studied by the light of histology, chemistry, and experimental physiology, we shall better understand inflammation; but it will ever be, if not the keystone of pathology, at least a leading pathological condition, ever present to the mind of the judicious practitioner, in relation to the past, the present, or the future, of any important case he is called upon to treat. Whether it be treated by frequent bleeding, by large doses of brandy, or by expectation, inflammation will ever be present to the medical mind, as a reality to contend with, or an eventuality to guard against. In treating a case, we instinctively ask ourselves, Is the disease inflammatory; and, if so, is inflammation the sole disease or only one of the elements? If inflammation, of what kind and type, and at what stage of its progress? This applies to diseases of the womb, and the question of their being congestive, inflammatory, or nervous, is the first to be asked; for, with some exceptions, if not inflammatory, we are to a certain extent reassured respecting their prognosis; and although it be true that acute uterine inflammation of the unimpregnated womb rarely leads to a fatal termination, chronic ovarian and uterine inflammation are often ever-lapsing morbid conditions, out of which arise diseases of menstruation, diseased and ulcerated mucous membrane, hypertrophy, sterility, and displacement of the womb. It would be singularly incorrect to suppose that most diseases of women originate in inflammation of the neck of the womb, but, besides the fact that many do, it must be borne in mind that the neck of the womb is its most accessible

portion, and as the application of remedies to the cervix is often the best way of curing inflammation of the body of the womb and of the ovaries, so this pathological error has often contributed to the patient's recovery.

When, in any portion of the sexual apparatus, I meet with persistent pain, redness, and swelling, I consider that congestion is merging into inflammation, and that the diagnosis is made certain by the supervention of suppuration. With most pathologists, I admit that inflammation depends on the paralysis of the vaso-motor nerves, and the enlargement of the blood-vessels of the part affected; and that these conditions lead to defective nutrition, and this defective nutrition to hyperplastic deposits, and to ulceration.

Bloodletting.—No science exemplifies better than medicine, that waywardness of the human mind which leads it to despise the idol of yesterday, then to gather up the broken fragments, and set up its regilt statue on a new pedestal as a fit object for adoration. Thus, bleeding has, at one period, been too much extolled as the best remedy for disease, and at another, abused as the most pernicious of all therapeutical agents; so late as 1840, Sir H. Holland stated, that "current opinions and prejudices are wholly on the side of bleeding," and "that a physician needs all his firmness to decline the practice," but a few years afterward, everybody agreed to reprobate bleeding. It is incredible that this should have come to pass, since nature bleeds women every month for thirty years of life, often profusely, not only without damage, but even with marked beneficial effect on the pains of menstruation, on the course of concomitant diseases, and with an inhibitive effect on the manifestations of gout, to which women are only liable after nature ceases to bleed them. It will be also obvious, that if bleeding was so objectionable, women would not cope with disease as well as we do, and their life would not be so often prolonged beyond the time allotted to us. Blind to such extensive teaching, the present generation of medical men are equally blind to the advantages that frequently follow large spontaneous or critical losses of blood in various diseases, and to the fact that, after severe accidents and surgical operations, patients often make better and speedier recoveries when loss of blood has been alarming.[1] On hydraulic grounds, the relieving an oppressed heart by venesection, enables it often, of itself, to regain control over circulation. Oxygen is only carried to the tissues by the red corpuscles, and to diminish their number, is so far to diminish the activity of the combustion proceeding in our tissues, and the morbid heat of inflammation and fever. In uræmia, the withdrawal of part of the poison may enable the nervous system to cope with the remainder, and even when bleeding has not a direct action, it often pro-

[1] On the Beneficial Results of Undesigned and Accidental Hemorrhage. By Samuel Hey. British Medical Journal, January, 1873.

motes the absorption of remedies, and shortens the duration of disease without protracting convalescence; so I do not feel disposed to give up a remedy which has stood the test of ages, notwithstanding the manner in which it has been abused. The preceding advocacy of a return to bleeding has been repeated in successive editions, and since the publication of the last, in 1868, abler advocates have supported the same views. This has been done by Dr. B. W. Richardson,[1] by Dr. Hanfield Jones, and in America by Dr. Fordyce Barker[2] and Dr. Bowditch.[3] Now that the benefits of bleeding have been demonstrated, it would be a most cowardly supineness not to bleed in appropriate cases. This reminds me that wanting to have a lady bled, I asked what he would charge, of an assistant-surgeon at one of our hospitals, and he would only do for three guineas what, thirty years ago, was done for a shilling in every market-place of England. The figure struck me as exorbitant, so I gave two guineas to the assistant-surgeon of another hospital, and, for want of practice, he made so small an opening, that the blood could only spurt out in a filiform jet, and, filtering into the surrounding cellular tissue, it made a very large black patch on the lady's arm, which lasted for three weeks.

Plethora sometimes exists with apparent weakness, which may be relieved by bleeding, and in seeking to determine the utility of this measure, it is well to be guided by the state of the pulse at the temples and at the heart, as well as at the radial artery, bearing in mind that, should there be much emaciation, the temporal and radial arteries would be brought nearer to the surface, and give a deceptive impression of vigor. One way of testing the force of the system, is to feel the pulse at the radial artery in the usual way, and then again when the hand has been raised above the head. If the pulse is then imperceptible, it is dangerous to bleed, whereas, if the change of posture in the arm makes little difference in the strength of the arterial impulse, the heart may be considered strong enough, and the blood-supply sufficient to admit of bleeding. At whatever period of life bleeding is resorted to, it must be borne 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 in exact relation to each other; particularly when vascular changes, inflammatory or congestive, are limited in extent. A patient may need the circulation changes brought about by bleeding, and yet may require, at the same time, that support or stimulus of the nervous power which is essential to insure the equal distribution of the blood, without which, disorders of a new kind will supervene.

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[1] On Bloodletting. Practitioner, November, 1863.

[2] Bloodletting in Obstetric Medicine. Appleton, New York, 1871.

[3] Venesection: its Abuse and Neglect. Clapp and Son, Boston, 1877.

Range of Utility.—In decidedly plethoric patients, bleeding may alleviate severe 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, and it has been known to rapidly check flooding. In plethoric women, with suppressed menstruation, bleeding sometimes brings on the menstrual flow. I do not think it worth while to brave the patient's prejudices by bleeding in such cases, but the old custom may have been better than the modern plans of treatment. In such cases our predecessors bled the leg and applied leeches to the vulva, but after cessation they bled from the arms, and never applied leeches to the vulva, and I follow their practice. It must be remembered that, owing to the discontinuance of bleeding, the medical men of the present day cannot bring the question to the test of experience, and they should remember to draw blood from the vena saphena, in cases of suppressed menstruation during the active periods of women's life, when bloodletting is deemed advisable. Romberg relates a case of suppressed menstruation causing distressing hiccough, which resisted numerous remedies, until three ounces of blood were taken from the leg, when it suddenly ceased. Lisfranc's plan of taking three or four ounces of blood from the arm before the menstrual periods, in the treatment of chronic disease of the womb, has been altogether abandoned by his countrymen; but I have found it sometimes serviceable in the treatment of chronic uterine and ovarian affections, and Dr. G. Bedford has praised the taking away of two ounces of blood from the arm, every fortnight, in diseases of menstruation. At the change of life, by taking ten or fifteen ounces of blood from the arm, I have cut short a distressing state of mental exasperation that had lasted for weeks, and I am certain that the silly prejudice against bleeding has allowed many women to drift into insanity at that important period of life.[1] Only 5 of the 500 patients that I questioned on this point some 20 years ago, had been bled at that epoch, and 10 cupped, while 138 out of the 500 were flooded at the change of life, showing how frequently nature adopts this plan, and how little her teachings are attended to. The effects of the bleeding should be aided by a judicious regimen; for doubtless the urgency for bleeding, even in plethoric women, would be considerably diminished, if it were not so difficult to persuade them to break through accustomed habits, and consent, for a time, to diminish the quantity of their food, and refrain from what has been shown to be otherwise prejudicial to them. If the indication to bleed soon recurs, in exceptional cases, it is better to bleed in progressively smaller quantities, and at progressively longer intervals. Tissot mentions a case in which he thought it right to bleed for three years, after which the patient recovered her health. Hufeland

[1] The Change of Life in Health and Disease, 3d edition. Messrs. Churchill.

used to bleed three times in the first year after cessation, twice in the second year, and once in the third. To a certain extent I sometimes follow the same plan, which imitates a natural process, for in 171 women out of 500, the menstrual flow ceased by a gradually smaller amount of discharge, occurring irregularly every two, three, four, five, or six months. In all acutely inflammatory diseases of the pelvic organs in woman, bleeding is occasionally very beneficial. It used to be a matter of invariable routine to bleed pregnant women, and, after the practice has been utterly abandoned for thirty years, it is now shown to be sometimes eminently useful, for pregnancy is able to induce a state of the blood that oppresses the kidneys and leads to albuminuria, and thereby to eclampsia. In such cases bleeding is the best remedy for this blood-poisoning, and may prevent a miscarriage, or premature confinement and eclampsia. Dr. Richardson says this is taught by experimental science, and Dr. Barnes, Dr. Bowditch, and Dr. Fordyce Barker agree with me in praising bleeding in such cases. Although Cazeaux was to a great extent right, in explaining the functional disorders of pregnant women to an impoverished state of the blood, still, as Dr. Fordyce Barker [1] says, "We occasionally see those who have not been remarkable for vigorous health, and who have been accustomed to menstruate freely, exhibit a wonderful renovation of functional activity during a first pregnancy, gaining flesh rapidly, and in such it may occur that real plethora may follow to such a degree as to jeopardize the continuance of the pregnancy, if not the life of the woman. In these cases the fetal circulation becomes oppressed in consequence of the troubles of the maternal circulation, and the appearance of the motions of the fœtus are retarded, if they have not yet been perceived, or they become weaker, diminish in frequency, and may cease altogether. That this is the result of local congestion, is demonstrated by the prompt reappearance of the motions of the fœtus after the mother has been subjected to a moderate loss of blood. Even in hydræmia, there may be an excess in the quantity of the blood, a kind of serous plethora, resulting in great disturbance of the circulation, and local congestions, which will be overcome by moderate venesection, followed by a more nutritious animal diet and the use of iron and other tonics.

"Uterine congestions, Cazeaux remarks, are witnessed most frequently in feeble and anæmic women. He observes they almost always appear at the menstrual periods, as though the monthly periodicity excited at these times a more active vitality in the uterus. The woman complains of tension, of swelling of the abdomen, a feeling of weight in the pelvis, the groins, and the upper part of the thighs. She also soon suffers pain in the region of the kidneys and in the loins. If the proper measures be

[1] Bloodletting in Obstetric Medicine. Appleton, New York, 1871.

not employed, the vascular congestion, and the pressure upon the uterine walls resulting from it, irritate the organ. Slight contractions occur; sometimes even a little blood flows from the vulva, and announces a threatened abortion. These symptoms are almost always accompanied with marked vesical tenesmus. If these symptoms do not disappear under the use of revulsives, diuretics, and moderate catharsis, bleeding to the extent of a few ounces is most useful, followed by the use of such medicines as improve the condition of the blood, particularly the chlorate of potash and the preparations of iron.

"Within a few years I have had a success in warding off the danger attending this condition, which culminates in puerperal convulsions, by venesection proportioned in amount to the urgency of the symptoms, which I have never before attained by other prophylactic means. On the 15th of last month I saw a lady, the mother of several children, in the eighth month of pregnancy, who was awakened early in the morning by a severe pain in her head, and almost immediately was seized with a violent convulsion, followed by two others, after a short interval, in which she remained in a comatose state. I took from the arm about thirty ounces of blood; after which she recovered in a great measure her consciousness. Elaterium was then given until very free catharsis was induced. As soon as any urine could be obtained, it was found to be loaded with albumen. During the day she subsequently had four more convulsions. Following the action of the cathartic, the citrate of potash was administered in half-drachm doses every third hour. After a few days she perfectly recovered, and all trace of albumen disappeared from the urine.

"It has seemed to me that there is some liability to err in the neglect of bloodletting, from the feeling that this measure should never be resorted to unless the patient is in a sthenic condition. But some of the most striking instances of its usefulness have occurred under my observation where the patient was extremely anæmic. In 1851, I was called to see a lady near the end of her first pregnancy. She was sitting in a chair, breathing with the greatest difficulty; her emaciated face was livid and covered with large drops of perspiration, and the action of the heart was most tumultuous and labored. The danger of immediate death seemed so imminent, that I did not stop to make any further examination, but, as speedily as possible, I opened a vein in her arm. After taking away about sixteen ounces of blood, the patient was relieved of all of her distressing symptoms. Dr. Francis subsequently told me that she remained perfectly comfortable for two days after this attack, when labor came on suddenly. While he was calling upon her, and just as she answered that she was very well, the membranes ruptured, and she discharged the most enormous quantity of waters that he had ever witnessed. She was soon delivered, without much pain, of a dead hydrocephalic fœtus.

It is my belief that if the pulmonary œdema and accumulation of blood in the right cavities of the heart had not at once been relieved by the abstraction of blood, this lady would have died."

Nothing can show more forcibly the value of bloodletting in pregnancy than the following remarks, made by Dr. F. Barker in the pamphlet already quoted. There can be little doubt but what bleeding should be oftener resorted to.

"Where there is great fulness of the vascular system, it then becomes a powerful sedative of spinal action; where convulsions are threatened, or result from stimulation of the spinal system by excess of blood or mechanical pressure of blood on portions of the brain, or from counter-pressure of the distended brain upon the medulla oblongata, bloodletting alone is often sufficient to subdue the disease, while it is equally important in preserving the brain from injury due to the convulsion. It is of cardinal importance where convulsions are threatened, or result from uræmia. I fully concur with Dr. Richardson's views, that in cases of uræmic poisoning, when the coma is fully developed, the patient is unconscious, the skin hot, the convulsion strong, and the suppression of urine nearly perfect, there is no remedy so swift, so sure, so useful as the lancet. To blister, to purge in such cases, is trifling with death. To bleed is to remove tension from the brain, to relieve congestion of the lung and set the breathing free, to remove pressure from the laboring heart, and to ease the congested kidney of the load that embarrasses it."

Bleeding is often judicious in acute post-partum inflammations, when *little blood* has been lost during delivery, and again in certain exceptional cases of puerperal mania, of which the following graphic instance is also from the pen of Dr. Fordyce Barker: "In February, 1868, I was sent for to visit a young lady the thirteenth day after her confinement. Her puerperal convalescence had been so free from all unpleasant symptoms that I had ceased to visit her. I found her gloomy and taciturn—a very marked change from her usual temperament—complaining of nothing, and refusing to answer any questions. The nurse informed me that the first symptom, which had occurred a few hours before, was a complaint of pain in one of her breasts, and a refusal to nurse her child, which she had been very fond of doing. One breast was somewhat tumefied, and evidently painful; her pulse was somewhat tense and quickened. The axillary temperature was 103° Fahr. There had been no chill. On visiting her the next morning, I found that she had not slept a moment, that she had not nursed her child, or permitted anything to be done to her breasts, or taken one drop of drink, one mouthful of food, or a particle of medicine. She was now beginning to talk wildly and rapidly, without noticing any remark that was made to her. During the day I visited her very frequently, and at each visit I found her condition becoming worse. In the night following, I found her face highly flushed, her eyes

red, and she had become very violent, with an astonishing display of muscular power. She would tear off her clothes, and scream incessantly, with a constant repetition of certain phrases, in such tones, and with such a 'damnable iteration,' as almost to drive every one crazy who heard her. With great difficulty her husband, her brother, and the nurse held her while I opened a vein in the arm. As the blood flowed, at first scattered generally around the room and on the persons of those of us about her, she gradually became more quiet, sank down on the bed, and fell into a sound sleep while I was bandaging the arm. Nearly five hours after she awoke, at once asked for her baby to put to the breast, and she was perfectly cured. After this she did not have a single symptom of disease, and her convalescence was rapid. We estimated the quantity of blood taken at about fifty ounces, although so much was lost at first that we could not judge very accurately. In no case have I ever seen the effects of medical treatment so promptly and so happily curative."

Counter-indications.—While the effects of bleeding are admirable in plethoric patients, they would be detrimental in most of those who are anæmic and nervous. If women were formerly too frequently bled, one reason was that headache, heaviness, drowsiness, and giddiness—a group of symptoms which I have called pseudo-narcotism—frequently occur during the derangements of menstruation, pregnancy, lactation, and the change of life, without notable blood impairment; and as they were considered to indicate determination of blood to the head, bleeding was resorted to. When I first began the study of medicine, I saw the ill effects of such a plan of treatment, and Mauriceau gives an insight into the fearful abuse of bleeding in France about 1700, when he mentions that two women were confined, at the full time, of well-developed children, although one had been bled 48 and the other 90 times during the nine months of pregnancy, for what he calls "*oppression de poitrine*," or the nervous sensations of suffocation at the pit of the stomach, which can be removed by sedatives, antispasmodics, and tonics. The same symptoms, with headache and giddiness, were considered indications for bleeding by Columbat and Aubert. Pomme, who practised in 1760, at Lyons, and who was bold enough to oppose a murderous practice, relates, as nothing out of the common run of practice, how, in a case of hysteria, which lasted 19 years, a M. Brionnet, the chief surgeon of the hospital of Chantilly, bled a patient 1,020 times—80 times from the foot, and 940 from the arm. Pomme's second case of catalepsy, with epileptoid fits and amenorrhœa, had been bled 300 times in a few years, the blood resembling yellow serum. In another case of catalepsy, bleeding always brought on delirium or convulsions, and yet the practitioners persisted in its practice.

Local Bloodletting.—This may be done by leeches and by scarificators of various kinds.

Leeches.—Contemporary scepticism has not yet sought to shake our faith in the value of local bloodletting by leeches, and no therapeutical injunction is supported by a similar amount of concurrent approval. While objecting to bleeding, Dr. Markham observes, that "there is a marked distinction to be drawn between the effects of bleeding in inflammation, and the local abstraction of blood from the inflamed part. Local abstraction of blood materially influences the inflammation, reducing the most characteristic of its phenomena. But local abstraction can only modify in this way the inflammation of internal parts, when there is a direct vascular connection between the part inflamed and the part from which the blood is taken." The irritation of the leech-bites may partly account for the benefit of their application when there is no direct vascular connection, but I have been sometimes at a loss to explain the sudden and marked improvement that has followed the application of leeches to the seat of pain in cases of headache, or severe neuralgia in some other part of the body; cases in which there was no inflammation or congestion to call for their application, and in which the patient's debility was such as to forbid loss of blood. The application of leeches could only then be warranted by the remembrance of the speedy relief that had always followed the application of leeches under similar circumstances when all other remedies had failed.

Until the recent spread of a more enlightened uterine pathology, the various inflammatory affections of the womb and of its adjacent organs were all lumped under what was called *inflammation of the bowels*, and leeches in large numbers were generally applied to the abdominal walls, or to the inner part of the thighs. This may still be done with advantage when the peritoneum is inflamed, and when it it desirable not to apply leeches to the womb, on account of the irritable condition of the vagina, or its virgin state. Both on account of the loss of blood, and as a result of reflex action conveyed from the skin to the inflamed part by the vaso-motor nerves, leeches thus applied are certainly very serviceable in peri-uterine inflammation; but the insular position of the womb renders it less liable to be thus influenced than by leeches applied to the cervix itself. The greatest amount of testimony favors the value of leeches in inflammatory affections of the womb, notwithstanding Lisfranc's doubts whether fifteen or twenty applied to the womb did not rather increase than diminish its congestion, and Becquerel's preference to venesection or to the application of leeches to the thighs. Dr. Bennet considers leeches useful as a means of diminishing the pain and distress of uterine disease, although on comparing the results of his practice amongst the rich to whom he applied leeches, and the poor to whom he did not, he came to the conclusion that they have very little effect on the duration of the uterine affection. This tallies with my own experience, and although I have not in the least lost faith in leeching the womb, I have

had recourse to the practice much less frequently during the last ten years, because the operation is as disagreeable to my patients as to myself, and I have found it difficult to get a woman to apply them to the precise spot where the leeches are wanted.

Mode of Application.—Ferguson's glass speculum is the best for the application of leeches. After introducing it, and wiping away the uterine mucus, the leeches should be taken up all together, quickly placed in the tube, and gently pushed down with the finger until they are felt to be in contact with the neck of the womb, when a ball of cotton-wool should be rather firmly placed and held over them. It would be a tedious and useless complication of the operation to use the glass leech-tube as well as the speculum, as is sometimes recommended. The application of leeches may be safely trusted to a well-schooled nurse, when the os uteri can be easily embraced by a speculum; but when the vagina is undilated, and when it is difficult to bring the os uteri within the field of speculum, the practitioner ought to apply the leeches himself, for I have repeatedly found that those which I had ordered to be applied to the womb, had been placed in the posterior cul-de-sac of the vagina, where the protuberant leech-bites could be felt. By applying leeches to the womb, if the object be to diminish inflammation and congestion, they must be used in sufficient number to relieve the womb, and, therefore, I do not apply one leech as is sometimes done, or two, as recommended by Dr. E. Kennedy. The number of leeches should be governed not only by the requirements of the case, but by the size of the speculum to be used; it is useless to apply a large number of leeches through a small speculum, for when they have not sufficient room they refuse to bite, or those that have not taken interfere with others that have. Indeed, I cannot understand writers who say that they apply ten or twelve leeches to the neck of the womb, unless the leeches be very small and the speculum very large, for I have often found the inutility of trying to apply more than four large ones with a moderate-sized speculum, more than six with a large speculum, and more than three with a small one. When a small speculum is used, it is therefore better to have small leeches, as the loss of blood seems to depend less on the size of the leeches than on the number of their bites. Nevertheless, as large leeches draw about half an ounce of blood, while small ones will only draw half that quantity, the surgeon should state in his prescription whether he wants large or small leeches to be applied. Less blood is also to be expected from a cervix which is hard and pale, than from one which is red and soft, in which case I have sometimes seen the speculum fill with blood, as if a vein had been opened. Doubtless a leech may accidentally fix on a distended vein or on a small artery, and thus cause a large loss of fluid, even from a small and hardened cervix, just as I have seen a jet of blood spout out from the bite of a leech, applied, with others, to an inflamed amyloid

breast. Sometimes leeches remain on a very long time, fill well, and very little blood afterward comes away from the bites; at others, the leeches soon fall off without filling, and a large quantity of blood subsequently oozes from the leech-bites. In women of full habit, deficiently menstruated, the application of leeches may set up such a determination of blood, that the patients will feel its rush to the womb, the loss may amount to a flooding and last for a few hours. Should the blood be in a healthy condition, the large clots that may form in the vagina have occasionally awakened the suspicion of a miscarriage, so it is advisable to warn the patient of what may occur. Even when the bleeding is not considerable, a large clot is frequently passed soon after the leeches have fallen off, and blood will sometimes continue oozing out for the two or three following days, so that the patient may lose, by each leech-bite, from two to three ounces of blood. If it be advisable to promote the bleeding, injections of warm water will disturb the blood-clots obstructing the leech-bites. Injections of a cold solution of alum, one or two drachms to the ounce, will often stop the bleeding when it is too abundant; and when it is urgent to shorten the procedure, a large number of leeches may be applied, and the bleeding stopped, when required, by the application of powdered alum to the leech-bites. Sometimes the leeches are not willing to bite, because opiate or astringent injections have been used previously to their application; the vaginal secretions should therefore be first removed by plain water. If the leeches are inanimate, it is useless attempting to make them bite if they keep showing their heads between the speculum and the cotton-wool with which it is plugged; it is often possible to make them take, by pressing them down to the neck of the womb. Some do not bite because they remain inactive between the vagina and the speculum, or because they find other leeches covering all available space, but are willing enough to do so when they find room. When all have fallen off, except one, a little salt may be applied, and if the remaining leech is not visible, it is well, gradually, to soak up the blood with cotton-wool, and withdraw the speculum very gradually, which may bring the leech into view and detach it from the vagina, on which it may have taken. If the missing leech does not come away with, or immediately after the withdrawal of the speculum, the finger should withdraw it, and if, on searching carefully, the finger cannot find it, it has probably entered the cervical canal.

Accidents of Leeching.—I think with Aran, that Dr. Bennet has exaggerated the ill effects of leeches taking on the inside of the uterine lips, for I have known this occurrence to be unattended with pain; though I quite agree with Dr. Bennet, that it is advisable to plug the os uteri with cotton-wool to prevent the possibility of this occurrence. Having applied six leeches to the neck of the womb of a young married woman, who was suffering from chronic uterine inflammation, five fell off, the

sixth was not to be found; after waiting a long time I left the patient, who suffered most severely, and had an hysterical fit, which subsided when she had passed the leech, enormously distended with blood. This accident has not been observed by Drs. Bernutz and Goupil, but it has been met with by Devarge, Besnier, and Sirédey, and several times by me. The leech is sure to find its way out, and the injection of a solution of common salt would kill it and bring it away from the vagina. The friends should be apprised of the probability of the application being attended by severe pain until the expulsion of the leech, but it would be most injudicious to tell the patient anything about this untoward accident, as the idea of such an occurrence would be sufficient to send many women into hysterics. I have known three leeches cause atrocious pain, although they were placed on the outside of the cervix, just as I have witnessed a great increase of uterine and vesical pain and disturbance in a patient who had three leeches merely applied to the upper part of both thighs. In a long-standing case of chronic uterine inflammation, ovaritis, and pelviperitonitis, I have repeatedly had to apply leeches to the womb; sometimes they have caused so much vaginal tenesmus, that it required an effort to prevent the speculum being expelled; sometimes intense uterine pain set in before the leeches dropped off, lasted for about twenty-four hours, and only subsided gradually on the passing from the womb of a considerable quantity of burning serous discharge, which scalded the vagina, labia, and the adjacent skin. Twice in one month, Hervey de Chegoin saw leeches applied to the neck of the womb cause severe pain and syncope, and so unusual an occurrence made him ask whether leeches are venomous at certain seasons of the year; whereas he only met with two nervous subjects about the same time. Leeches to the neck of the womb produce nettle-rash in some women, but this soon disappears. The nature of the blood that comes away gives us some information; thus, if very dark, it implies its long-continued stagnation in the congested womb, while florid blood shows the womb to be in a more healthy state, and poor watery blood points to a cachectic state of nutrition.

Struck by an accidental coincidence, Scanzoni speaks in exaggerated terms of the dangers of the application of leeches to the vagina. Within the last two years I have done so frequently with the best results, as I have stated in my work "On Uterine and Ovarian Inflammation." When the object is to relieve congestion of the pelvic organs, it is immaterial whether the leeches be applied to the vagina or to the womb itself, and when the womb and vagina are very sensitive, to introduce the speculum two inches, instead of four or five, will give the patient much less pain. When the cervix is hard, it will yield very little blood, whereas the leeches may draw a fair amount from the vagina. Again, in complicated cases, where ovaritis and internal metritis are associated with an inflamed oversensitive cervix, I have occasionally seen three or four leeches cause flood-

ing to an alarming extent, and such severe pain that I could not repeat the application; whereas, by applying them to the vagina, I have been able to cure the disease without accidents.

When the object is to diminish the congestion of pelvic vessels, and the use of the speculum is very painful, I prefer the old plan of applying the leeches to the cutaneous surfaces of the labia, and not to their mucous surface, for fear of inflaming the lymphatics. In the case of a lady, suffering from acute metritis and ovaritis, which caused severe headache, sexual excitement, hysterical mania, and absence of the menstrual flow, I have several times applied six leeches to the vulva, notwithstanding the extreme debility of the patient. They bleed moderately, and the result is magical; the pelvic pains diminish, so do those of the head, and the mind and temper become calm; the leeches sometimes give excruciating pain until they fall off, but perhaps this pain may have helped to produce the sudden abatement of the distressing head symptoms.

Frequency of Application.—I have met with many cases in which the patients had been leeched by a nurse every fortnight for one or two years, by the advice of a highly esteemed practitioner, but without his supervision. Although this plan of treatment was recommended by Sir Charles Locock, I think it most objectionable to order strong measures without watching their action. If the patients are young and delicate, the too frequent application of leeches will increase debility and nervous excitement, and may develop the seeds of phthisis, or of any latent constitutional disease. If strong, the frequent application of leeches makes the womb a permanent centre of morbid attraction for the blood, and actually fosters the condition that it was intended to remove.

Range of Utility.—In inflammatory affections of the mucous membrane of the neck of the womb, with or without ulceration, I deprecate Scanzoni's plan of applying five or six leeches every six or eight days. For a deep-seated ulceration on a hard basis, three or four leeches applied several times before or after menstruation, whichever I find on trial to suit the best, is the plan I sometimes adopt, and scarification suffices when the cervix is soft and spongy. In internal metritis, a much more frequent disease than is supposed, and which forms the sole or principal pathological condition in many cases of dysmenorrhœa, when, without being very painful, the menstrual flow is very scanty, very profuse, or alternately both, it is well to leech the womb just before the menstrual flow, or afterward if a scanty menstrual flow has left the womb congested. It is for the practitioner to determine the number of leeches to be applied in each particular case. It has been lately affirmed, that very copious bleeding, by leeching the womb, was the way to cure internal metritis; but I cannot trace the recovery of any of my patients to this mode of treatment. When it is a question of once applying four or five leeches, we should be more guided by the circumstances of the complaint than by the state of

the patient's strength, for much as I deprecate the application of leeches every fortnight, and still more the sending of a patient into the country with this routine prescription, I sometimes apply a few leeches when the patient is so weak and anæmic as not to have a drop of blood to spare, and with good results. I did so to a lady who had been confined to her bed for more that two years by ulceration of the cæcum, pelvi-peritonitis, and uterine inflammation. Four leeches applied to the vagina, by diminishing pelvic congestion, relieved headache and mental depression, promoted sleep, removed sickness, and improved the appetite for several weeks, so that she was soon able to repair the loss of blood with interest. For acute ovaritis and pelvi-peritonitis, I deem it better to apply the leeches to the abdominal walls than to the womb, as advised by Aran and Bernutz; for I have more than once seen their application to the womb convert chronic peritonitis into acute, and Aran has seen scarification of the womb have the same result. Under similar circumstances the leeches might be applied to the vulva, to the inner part of the thighs, or to the perineum. Scanzoni speaks very favorably of the application of three or four leeches, every eight or fifteen days, when menorrhagia coincides with flexion of the womb. He thinks it corrects the stagnation of venous blood in the veins, also the friability of the uterine tissues thus produced, and that it diminishes the serous infiltration of the tissues, which then resume their tonicity. The same author states that metrorrhagia, which resisted the usual treatment, suddenly ceased on the application of a few leeches to the womb. I do not think the plan worth a trial, but the quantity of blood taken away by the leeches would be trifling when compared to what is being lost. When fibrous tumors cause menorrhagia, it is likewise worth while trying the effects of an application of two or three leeches to the womb before the menstrual periods, for I have known it prevent flooding, which was sure to recur when this pre-menstrual leeching was omitted. When leeches are applied to relieve congestion, caused by a fibrous tumor being jammed into the pelvis, I have found three leeches bleed very profusely, when applied to the thighs.

The vascular system of the ovario-uterine organs is often permanently and actively congested, either from the menstrual molimen having been unsatisfied by its accustomed secretion, or by the retention of the secreted menstrual flow. In such cases a few leeches before the menstrual period will often set things right. In some instances, amenorrhœa or metrorrhagia depend on congestion of the pelvic vessels; this may be inferred from the varicose condition of the veins of the vagina and labia, and then leeching the vagina is of great service. Dr. E. Kennedy mentions, as a cure for the fortnightly menstruation, to forestall its appearance by the application of leeches a day or two before its occurrence; but I prefer giving sulphate of quinia. Leeching the womb may be very useful in uterine neuralgia, as in the following case. A thin, sallow-looking lady,

the wife of a consulting surgeon, suffered from choking epigastric pains, brow-ague, and uterine neuralgia, which always began at the middle of the inter-menstrual period, and lasted until the flow appeared, with great pain, rendering her unable to do anything. The womb seemed perfectly healthy, but, though married several years, she had never been pregnant. She had taken Turkish baths without effect; opiates, advised to be locally applied, were not well carried out; but the application of six leeches to the neck of the womb very much diminished the distressing symptoms, which were intimately related to menstruation; for, when that ceased, during a three months' residence in Germany, there was no uterine neuralgia. I have seen the vomiting attendant on uterine disease very much abated by leeches applied to the womb; this has been likewise observed by Dr. Smith, of Weymouth. In hæmatocele, the reabsorption of the effused blood is greatly promoted by two or three applications of leeches at three or four days' interval, and by another application on the first sign of the ensuing menstrual period. In such cases it is better to apply the leeches to any easily attainable portion of the vagina.

When there are signs of congestion of the portal vessels at the change of life, I have sometimes done good by ordering six or eight leeches to the perineum, and I was surprised to find that Ashwell advocated bleeding the womb by leeches as the best mode of depletion at this period; for to apply them then, except in cases of uterine inflammation, is to seek to prolong what nature wants to curtail. A case will be found in my work, "On the Change of Life," in which leeches applied to the womb restored the movement of limbs which had been paraplegic for several months at the period of cessation. To check the determination of blood to the womb, is a culminating indication of treatment at the change of life; and, except in cases of uterine inflammation, I do not apply leeches to the womb, for I find that small general bleedings are more effectual in checking the monthly turgescence of the sexual organs, which may be troublesome for some years after the cessation of menstruation.

Leeches in Pregnancy.—Formerly bleeding was resorted to in order to abate all diseases of pregnancy, and in like manner leeches may be useful in preventing abortion, when it has been previously caused by a severe inflammation of the neck of the womb with distended varicose veins; indeed, nature occasionally shows the utility of the practice, by the rupture of a distended uterine vein, leading to the occurrence of a red discharge. Under such circumstances it is well to apply three or four leeches to the womb, at two or three successive menstrual periods; and, by so doing, I have repeatedly conducted pregnancy to its full time in women who had previously miscarried; but if there be only a moderate amount of uterine inflammation, it is better to keep it in check by injections, and to reserve all active treatment until after confinement. Mr. Whitehead has abundantly illustrated the utility of leeching the womb

under these circumstances in his work on "Abortion and Sterility," but no one has so strongly advocated the practice as Dr. Bennet, who remarks: "I have repeatedly applied leeches to patients who were one or two months pregnant without being aware of the fact, and that not only without any bad result, but with actual benefit. This emboldened me to apply them in the early stage of pregnancy to those in whom repeated abortions had occurred, with a view to carry on gestation. Generally speaking, when a female who had repeatedly aborted is found to be suffering from inflammatory disease of the neck of the uterus, the removal of the uterine malady is all that is required to modify the tendency. In the majority of such cases, the subsequent pregnancies are carried to the full term, but it is not always so; the patient may continue to become pregnant and to abort, either at the same period of the pregnancy, or at irregular periods, notwithstanding the cure of all disease. In these cases, I have found that the application of a few leeches to the cervix for one, two, or three successive months, singularly successful in preventing the abortion. I usually choose the time that menstruation would be due were the female not pregnant. I would remark that the application of leeches to the cervix under such circumstances, is merely carrying out in a more rational and efficient manner the practice of the older accoucheurs, who recommended in these cases the monthly abstraction of a small quantity of blood by the application of leeches externally to the ovarian regions. This plan of treatment is successful by removing morbid uterine congestion exaggerated at each month by an irregular menstrual molimen."

In one case, obstinate vomiting, at the fourth month of pregnancy, resisted every remedy, but was suddenly cured by ten leeches, applied to the cervix, which was of a deep red color, and very hard; Negrier also recommends this plan. It would, of course, be illogical to attribute to the leeches a miscarriage, that might follow their application when abortion has become habitual, and I have known their application to be followed by miscarriage in a patient, in whom I overlooked pregnancy, on account of the absence of its usual signs and symptoms, and from the fact of the tumor being clearly limited to the left pelvic region. Even in this case, it is probable that the miscarriage was caused by the patient having danced a great deal on the previous evening, although she had been told to keep quiet. Leeches should not be applied to the pregnant womb without its being plugged with cotton-wool, for their taking inside the cervix would assuredly bring on abortion. A friend of mine applied six leeches to a patient, who was suffering severely from extensive inflammation, in the fourth month of her pregnancy. Only four of the six leeches were accounted for, and as the other two could not be recovered by the finger or by injections, it is almost certain that they bit inside the cervix; for the pain of their application did not subside until the woman aborted on the following day.

Counter-indications.—The application of leeches to the womb is counter-indicated by very acute inflammation, and when the vagina is much inflamed. Whenever a digital examination is very painful, the pain and fatigue of the operation will detract from the advantages to be otherwise expected from the application of leeches. By applying leeches to the inner part of the thighs, and the assiduous use of emollient injections to the vagina, inflammation will soon be sufficiently reduced to permit the application of leeches to the womb or vagina. I have seen chronic peritonitis become acute, in consequence of leeches being applied to the cervix. Leeches should not be applied in cancerous or syphilitic affections of the womb, for fear each leech-bite should become a specific ulcer. For a similar reason, they should not be applied to the womb when its inflammation is characterized by the production of pseudo-membranes. A practitioner, unacquainted with this uncommon variety of disease, applied leeches to the womb of a patient of mine—every leech-bite ulcerated; the ulcers put on a false membrane; and the complaint was thus greatly increased by the injudicious application of a good remedy.

Scarification.—All that has been said of leeches, applies, in a limited measure, to scarification, by which nature is imitated, in so far as blood flows from the vessels of the neck of the womb. By the bistoury or the scarificator usually sold, we cannot imitate the suction of blood by the leeches, but this has been attempted by Mr. Mayer, in his "Scarificateur à Syphon." For the reasons already given, I often prefer scarification to leeching, but I warn the profession against too frequently taking away even a small wineglassful of blood. I have traced the extreme debility and emaciation of several patients sent to me from the country, to their having had the womb scarified, two or three times a week, for six weeks or two months. This plan may satisfy the patient, by the immediate relief it sometimes affords to the symptoms of uterine disease, but it may mitigate the local symptoms at the expense of the constitution.

Purgatives.

It is many years since I pointed out that the rule was for the bowels to be relaxed by menstruation and by chronic uterine disease; hence, purgatives should be sparingly used in such circumstances. When, however, the bowels are constipated before and during menstruation, they should be moved, and in chronic uterine disease I frequently add three grains of blue pill to a purgative, to be always taken at the end of the menstrual flow. For amenorrhœa it may be advisable to give one or more brisk purgatives about the time when the menstrual flow is due, to supplement and to promote it. Since my noticing the coincidence of chronic irritation of the colon with chronic uterine dis-

ease, the fact has been observed by several good pathologists. It often follows the vicissitudes of uterine disease, and the opiates soothe both complaints. With some, however, constipation is troublesome, and it is necessary to ring the changes on warm purgatives and on the purgative mineral waters of Frederickshalle and Pullna. I have found it useful, in uterine inflammation, to give precipitated sulphur, in doses sufficient to relax the bowels, for at least six weeks, when there is no intestinal irritation; I do not see why it should not act as favorably on the congested uterine capillaries as on those of the skin and of the rectum.

Antimony.—In our anxiety to discover new remedies, we should not forget to use those sanctioned by long experience, and there is not a more powerfnl antiphlogistic than tartar emetic: one-sixteenth of a grain, or fifteen drops of antimonial wine, every hour, or every second or third hour, in an effervescing draught, is an invaluable remedy in the acute stages of ovaritis, metritis, and vaginitis. Dr. Beattie has witnessed in favor of the value of this medication to check and cure inflammation of the breasts.

Mercury.—Having *seen* the effusions of iritis, inflammatory as well as syphilitic, melt under the influence of mercury, I still believe that the same agent can remove the inflammatory effusions of other organs, but while believing in the utility of mercury as an antiphlogistic, and as a means of acting on the liver, I have always protested against the plan of giving a *mild* course of *mercury* whenever a case is obscure and protracted. Some of my patients will never recover from "this mild course of mercury," to which they were subjected twenty years ago; and Dr. Wright's analysis has proved how greatly the constituents of the blood can be injured by mercury. With regard to inflammatory affections of the womb, I have no doubt that the use of the bichloride of mercury is perfectly safe in Dr. Oldham's experienced hands, but I should be sorry to see the plan popularized, because a cure may often be effected by better means, and, as a rule, I restrict the exhibition of mercury to the syphilitic affections of the womb. In cases of chronic inflammation of the body of the womb, I give it to gain time, and with moderate hope of success. The late Dr. Mackenzie thought syphilis was answerable for most of the current cases of uterine disease, aud he generally prescribed half an ounce of the following mixture, three times a day: Acid muriatic dil., ʒ vi., tinct. ferri muriatic., ʒ iij., liq. hydr. perchlorid., ℥ j., and aq. destill., ℥ vi. It must, however, be borne in mind, that like most of those who give mercury in ordinary cases of uterine disease, he gave it in conjunction with vaginal injections and other judicious measures; and as many of the patients soon recovered, the credit of the cure was given to the small doses of bichloride of mercury, whereas the patients might have recovered just as soon without that remedy, provided the rest of the treatment had been followed out. Whenever I have tried the plan in well-chosen cases,

without any other measures, I have found it useless, and my experience is confirmed by that of Dr. Bennet. Neither am I quite convinced of the utility of applying mercury to the neck of the womb, although I order mercurial suppositories in obstinate cases of uterine congestion and swelling, for the sake of doing something that ought to do good. I am aware that some practitioners assert that mercury, pushed to salivation, will dispel hard hypertrophy of the neck of the womb, but I have not been more fortunate than Scanzoni in obtaining this result. In such cases I rather depend upon preparations of iodine given internally, such as iodide of potassium, or the syrup of iodide of potassium and iron, and on the saturation of the neck of the womb with tincture of iodine on alternate days, during the healing of an issue made with potassa fusa in the neck of the womb.

When, however, all remedies have been exhausted, and the patient still continues to suffer from internal metritis, with chronic inflammation of the body of the womb, I think it may be permitted to try the effects of mercury, pushed to salivation. I have seen it effect a cure, so has Dr. Gunning Bedford; and Dr. Lever thought well of the plan. I have strongly advocated the use of mercury, applied externally, in all inflammatory affections of the womb, ovaries, and peritoneum, and have given benefit by mercurial frictions, mixing the sulphates of atropia and of morphia with mercurial ointment, in the proportion of three grains of the former and six of the latter to an ounce of the ointment. I now use, however, the oleate of mercury—5 per cent.—with addition of six grains of pure morphia to the ounce. I order it to be smeared over the lower part of the abdomen, and a bit of flannel to be worn over the greasy surface. This has to be left off occasionally, particularly in summer, for it irritates the skin. My own experience of the value of the local use of mercury is confirmed by that of numerous authorities; thus Mme. Boivin says that in cases of chronic pelvi-peritonitis, inflammatory adhesions of the broad ligaments, accompanied by dysmenorrhœa, pains, constipation, and tendency to abortion, she gave relief by persisting in mercurial frictions over the ovarian regions; not only stopping the pains, but re-establishing the proper catamenial discharge, curing the ovarian irritation, and imparting to the uterus the power of retaining its fruit until maturity. Dr. Granville and Professor Pistocchi have also cured the tendency to that species of miscarriage produced by ovarian irritation, by mercurial frictions. Jahn employed an ointment composed of two ounces of mercurial ointment with three drachms of iodide of potassium, in a case which had lasted seven years, and was accompanied by amenorrhœa; of two ovarian swellings, one disappeared, the other was much reduced. In the public institutions with which I have been connected, I have prescribed some such compound mercurial ointment, whenever a patient complained of deep-seated pains in the ovarian or pelvic region, extending to the

loins and thighs and depending on previous severe labors. In the milder cases, the pains subsided after the ointment had been used for a few days; and in other cases, when pains had followed severe labor and been considerable, and had lasted for two or three years, I have seen them disappear after using the ointment for six weeks or two months. In some cases the use of the ointment was followed by the cure of the vaginal discharge, from which the patient had been also an habitual sufferer. When mercurial external applications are prescribed, the patient should be warned to take off her rings before applying the mercury, or the rings will require sending to the jeweller.

Iodine.—When the case is one of long duration, relapsing at menstrual periods, and particularly if it be possible to detect uterine or ovarian enlargement, I have faith in iodine preparations, one to five grains of the iodide of potassium being given twice a day, in whatever bitter infusion agrees best with the patient, and the syrup of iodine of iron is another good preparation. Three or four drachms of the iodide of lead or potassium ointment are to be rubbed in, or smeared over, the painful part of the abdomen; over this a large piece of oiled silk should be spread, then 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. The biniodide of mercury, which, in India, has been found so useful to dispel goitre, and to reduce enlarged spleen, by Professor Maclean, might be of use in suppositories, for hypertrophy of the womb.

Alkalies.—The cooling effects of effervescing draughts, and of the saline diuretics like the acetate or the citrate of potash, and of the nitrate of potash, are well known.

Aconite.—It has been already alluded to as producing effects similar to those of venesection when given internally. The tincture of the veratrum viride has an analogous action, and it is a favorite remedy in America.

Counter-irritants.—Diseases of the eye teach the immense value of counter-irritants to cure inflammation, and[1] oculists of the present day have as much faith in blisters and setons as the practitioners of the last century. They believe that derivatives withdraw from the blood certain noxious constituents, and that they act as emunctories as well as derivatives. They have made out that blisters should be applied to sound skin, as near as possible to the seat of mischief, and that setons do not abate inflammation unless they cause an abundant flow of pus. What can be

[1] On Counter-irritation in Congestion and Inflammation of the Eye. Mr. J. Vose Solomon: Lancet, March, 1870.

On Counter-irritation in Diseases of the Eye. Mr. Fourneau Jordan: British Medical Journal, February, 1870.

Mr. Walker, of Edinburgh, has written in praise of this practice in a medical journal.

seen to take place in the diseased tissues of the eye, inevitably takes place in the hidden congested and inflamed tissues of the ovaries and of the womb, so it may be received that we should oftener cut short chronic diseases of the sexual organs, if we made a more intelligent and a more persistent use of counter-irritants. Mustard poultices and turpentine epithems, when applied to the seat of reflex pain which accompanies the acute stages of uterine inflammation, often give relief; and these remedies may be again tried in the second stage of acute inflammatory affection of the womb, particularly when the peritoneum is implicated; but blisters are more useful. In chronic affections of the body of the womb and its neck, I prefer painting the abdomen with caustic tincture of iodine every week or more frequently, or the pustulation of the skin by croton oil or tartar emetic, or its superficial cauterization by the marteau de Mayer, or an ordinary silver tablespoon held in boiling water for two or three minutes, and applied to that part of the skin which covers the seat of pain, for from five to ten seconds. The action of the heated metal should be timed, watch in hand; for it can be made to act as a blister or as an issue by prolonging its contact with the skin. When acting as an issue, after having been quiescent for a few days, the skin around the cauterized spot inflames and the wound discharges. After a few days the eschar falls off and a considerable amount of irritation is kept up for about six weeks. In chronic uterine affections, with great and widely spread neuralgia, the remedy is of service; and these painful external sores seem to divert nervous irritability from the deeper pathological centres of morbid action. Sir A. Carlisle, Drs. Corrigan and Day, Jobert de Lamballe, Mayor de Lausanne, Sédillot and Bouvier, have warmly praised the actual cautery in the treatment of neuralgic affections, and Dr. Brown-Séquard affirms that the cauterization of the nape of the neck by moxas or the red-hot iron, is the most effectual way of lessening the too great excitability of the nervous centres. Valleix made transcurrent cauterization the basis of his treatment of such complaints, and Dr. Day praises its use in neuralgic affections of the aged, while Dr. Mitchell, of Dublin, thus relieves the lumbo-dorsal and other fixed pains of uterine disease. No one would wish to apply a seton to the labia for the cure of uterine disease, as was frequently done last century; but Huguier's practice of passing three or four silk threads through a fold of the skin above the pubes, is worthy of trial in chronic affections of the sexual organs.

An issue at the pit of the stomach is a heroic remedy for the incoercible sickness of uterine affections, and Dr. F. Churchill agrees with Fothergill in the utility of applying issues and blisters at the change of life to those who in youth have been relieved from cutaneous or other disorders, by the establishment of the menstrual flow. He says, "I have repeatedly tried caustic issues, or perpetual blisters, with the greatest advantage. They certainly aid the action of the remedies, and I think

prevent the recurrence of those irregular congestions which Fothergill has described." Gardanne and B. de Boismont likewise speak confidently of the utility of issues in preventing diseases at the change of life, but I do not remember having ordered them in such cases. There has been nothing more heard of the application of cantharides to the cervix, during the last ten years. I have not so used them, and I think the practice may be relegated to the limbo of remedies that have ceased to cure. Not so the application of issues to the neck of the womb itself, and a hard hypertrophied neck of the womb may be often advantageously modified by the application of potassa fusa c. calce; but this will be fully considered in the chapter on caustics.

ELECTRICITY.—Tripier praises faradization of the womb as a good way to bring about the resolution of chronic uterine inflammation, and to check the proliferation of the connective tissue which causes the increase in the size of the womb. Of this, as of many other things, I plead ignorance.

CHAPTER VII.

CAUSTICS.

"WHAT diseases medicine does not cure the knife cures; those which iron cannot cure, fire cures; and those are incurable that fire cannot cure," is the last of the aphorisms of Hippocrates; and in one department of surgery or in another there has been an unbroken chain of evidence in favor of caustics up to our time. Since their use in uterine surgery was taught by Dr. Henry Bennet to English pathologists, they have all, more or less, sanctioned their use. Notwithstanding Dr. Rigby's belief in the constitutional origin of uterine diseases, he admitted that uterine ulceration sometimes requires to be treated by potassa fusa c. calce, or even by potassa caustica; and although Dr. West represents slight uterine inflammatory lesions as of little moment, still, for the cure of confirmed ulceration, he advises the plan of treatment that I shall recommend. During the last thirty years, the utility of escharotics for the cure of a host of surgical diseases has been amply shown by Bonnet, Piétrequin, Bouchacourt, and other surgeons of Lyons, who have found an able exponent in Dr. Philippeaux,[1] whose work I strongly recommend. Dr. Brown-Séquard ascribes a still wider range of utility to caustic surgery, for he states that "Against the increased excitability of some part of the nervous centres, the best means assuredly are the powerful modificators of nutrition, which I am sorry to say are so little employed by regular practitioners, the cauterization of the back of the neck by moxas or by the red-hot iron." As the mode of action of caustics is so ill appreciated by the majority of practitioners, and as the advantages of their use are so inadequately recognized, I shall treat of their varied action at considerable length.

Regarding the scope of caustics in uterine surgery, they are valuable to cure: 1st, chronic catarrhal affections of the womb; 2d, uterine ulceration; 3d, uterine hyperplasia and hypertrophy.

First.—The genital mucous membrane, like all others, may secrete pus without being ulcerated: and when this catarrhal condition is of recent occurrence, it may be cured by tonic and by sedative remedies, in-

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[1] Traité Pratique de la Cautérisation. Paris, 1856. Dr. See's Traité de la Cautérisation is of later date.

ternally given or externally applied; but not so when inflammation has lasted long, in the lining membrane of the cervix, of the vagina, or of the body of the womb.

Second.—Ulceration of the womb may be the result of the cervix having been bruised or fissured in the act of parturition. Moreover, when the lining membrane of the womb is acutely inflamed, the serous discharge that comes away in gushes, scalds the vagina, and inflames the vulva and adjacent skin; something similar occurs in the more frequent cases of less acute inflammation of the inner womb. Its hyper-acid secretion continually trickles over the lower lip, removes its epithelium, prevents its reconstruction, and this causes ulceration as effectually as if diluted nitric acid were repeatedly dropped upon the skin of the hand, or as if a blistered surface were so irritated as not to be allowed to heal.

I do not see how we can avoid classing under the term ulceration the slight erosions or exulcerations of the womb which are only important for the diagnosis of a similar condition of the inner cervix; and the more extensive destruction of tissue, that would be called ulceration by all pathologists. These erosions, by persisting and multiplying, sometimes give to the end of the cervix the appearance of a large raspberry. If, after having been blistered, the denuded surface of the skin continues raw and secretes a sero-purulent fluid, what is it but an ulcer? and by what other name can it be called? In like manner must the permanent epithelial denudation that surrounds the os uteri be called an ulcer. Of course we ought to distinguish between the severer forms of ulceration, and the erosions and ulcerations which are the slighter and earlier manifestations of the same phenomenon, just as we should speak of the raw surface of an unhealing blister as a superficial sore. I dare say Dr. Henry Bennet would be the first to allow that, in the first edition of his work on uterine inflammation, he exaggerated the importance of ulceration of the cervix in the production of diseases of women; but there is no denying its frequency, or the group of symptoms by which it shows itself to be either a substantive disease or the sign of more important lesions in the cervical canal; and the vast importance of the cervix, in uterine pathology, has been admitted by Hildebrandt and the most recent observers. It stands to reason, that to cure uterine ulceration, the first indication is to strengthen the conservative force by suitable food and stimulants, and by tonics which are known to tell on the nerves and vessels of mucous membranes. At a rough guess, I dare say that by these means some fifty per cent. of ulcerative lesions of the uterine mucous membrane are cured. If, in addition to tonics, vaginal injections, and the other measures set forth in a previous chapter, are carefully carried out, perhaps thirty per cent. of somewhat more severe cases of uterine ulceration would get well. With regard to the remaining twenty per

cent., the patients may have rested on the sofa till rest damaged the system; they may have been drenched with tonic medicines, and have used injections till they have lost all faith in them; but they do not recover. Whether the ulcer depends on a bad constitution or on the traumatism of abortion and parturition, or on the fact of the sexual organs being congenitally predisposed to disease, in such patients ulceration will not heal without caustic treatment; and it is often the same with the granular condition of the lining membrane of the eyelids.

Third.—Considerable hardening and enlargement of the womb, whether resulting from hypertrophy, or from chronic interstitial inflammation, should be treated by caustic issues.

With regard to the explanation of the benefits derived from the use of caustics when applied to an ulcer, they always remove from its surface a layer of ill-natured cell growth, and to an old wound give a fresh surface, with a tendency to more rapid repair, if the caustic be not too frequently applied.

When an ulcer on the uterine mucous membrane heals by an effort of Nature, or by the application of a catheretic, like nitrate of silver, no trace will remain of its previous existence; there is nothing in the appearance of the mucous membrane to permit a pathologist to suppose that it had or had not been previously ulcerated. Even if potassa fusa c. calce be applied to the cervix, so as to cause an eschar about two lines in depth, the ulcer will heal and become covered with a healthy mucous membrane, so that the previous existence of the ulcer can only be detected by a slight depression, and not always. If this be the case with deep ulceration of the cervix, it will be admitted that exulcerations and slight ulcerations of the womb heal without a trace of their previous existence. It would indeed be singular if the uterine mucous membrane escaped from that law which permits the ulceration of all mucous membranes to heal without cicatrization, unless the subjacent tissues have been very deeply attacked; evidence of which can be occasionally witnessed when ulceration affects the membrane of the mouth. When a caustic like potassa fusa is applied as an issue, it produces adhesive inflammation proportionate to the amount used. Many of the blood-vessels being cut through by the caustic, contract or disappear during the following three months, the enlarged cervix becoming gradually smaller. Something similar has been observed in ophthalmic surgery by Mr. Pridgin Teale,[1] for he represents the blood-vessels of the cornea as becoming obliterated when they have been cut through by cicatrices; a tendency to atrophy on the part of outlying vessels which continues for a long time. Lastly, healthy action is just as contagious as a morbid process, and if a very limited portion of a diseased

[1] On Atrophy Induced by Cicatrix, and its Surgical Value. British Medical Journal, December, 1869.

womb can be induced by caustic to put on thoroughly healthy life, it may gradually leaven the whole mass of diseased uterine tissue, and make it sound.

Catheretics.

It is well to distinguish by this name the mild caustics from others that energetically destroy tissues.

Sulphate of Zinc.—Its well-known action on mucous membranes, when more or less diluted, suggested to Simpson to apply the undiluted salt to morbid uterine tissues. Bequerel made it into sticks, and introduced them into the cervix, but he found they brought on acute inflammation. Dr. J. Braxton Hicks has, however, recommended sticks of anhydrous sulphate of zinc as very useful and safe in the treatment of those conditions of the canal of the cervix uteri which produce cervical leucorrhœa and menorrhagia. This mode of treatment is much more efficacious than fluid injections, because the stick can be allowed to remain in the canal, whereby a much more prolonged contact is obtained. Dr. Mathews Duncan has had sticks made of sulphate of zinc and alum. He introduces an inch or more of this zinc-alum stick into the cervix, and keeps it in place by a plug of cotton-wool, to be left in an hour or two, when it is to be removed, and tepid water freely injected. Copper-alum sticks have been made by melting one ounce of sulphate of copper with half an ounce of alum, the liquid being poured into bronze moulds. These sticks have been used in the manner just described, and they may be serviceable when better agents that I am about to describe are of little avail; but I do not like this mode of applying caustic, and Nélaton has repeatedly seen the introduction of even tannin sticks cause serious accidents. Boracic acid, strongly recommended for the cure of other wounds by Dr. Cane, might be useful as a uterine topic. His boracic lint is prepared by soaking lint in a saturated *boiling* solution of the acid. On drying the lint, a copious deposit of fine flaky crystals takes place between its fibres. The concentrated solution is made by dissolving the acid in boiling water to saturation.

Perchloride of Iron.—Aran was in the habit of applying freely to ulcers of the cervix a glutinous compound, made of equal parts of collodion and ethereal tincture of perchloride of iron. To similar lesions, Dr. Braun, of Vienna, has strongly recommended the application to the cervix of balls of compressed cotton-wool, saturated with a strong solution of perchloride of iron; but in one instance it caused the vagina to slough, and the result was two fibrous vaginal rings, hardly admitting the little finger. I look on this agent as a styptic to check bleeding after surgical operations, and even for this purpose I prefer the subsulphate of iron, because it does not irritate the vagina like the perchloride. As a caustic, these drugs are eclipsed by more valuable agents.

Carbolic Acid.—In a previous edition I mentioned creosote as having been found a good application to uterine ulceration, and that carbolic acid would doubtless be soon recognized as valuable in uterine surgery. I stated that Dr. Holmes Coote had found carbolic acid very useful in the treatment of mucous tubercles. He had them brushed once a day with equal parts of water and carbolic acid, and washed them in a lotion containing five grains of carbolic acid to an ounce of water; large crops of mucous tubercles having disappeared after ten days of this treatment. I also related that Neumann, of Vienna, had come to the conclusion that: 1. Carbolic acid when concentrated is a powerful caustic, reaching beyond the spot of its application, and deeply affecting the skin. 2. It renders the tissues transparent, without thickening them. 3. The several tissue elements of the cauterized part can be distinctly recognized in the eschar produced by the intense caustic action of carbolic acid. 4. Carbolic acid acts upon the tissue, by causing mummification rather than complete destruction. Since then, Dr. William Playfair [1] has extensively tried carbolic acid, in the well-known cases of chronic uterine catarrh with more or less cervical erosion, and he is so well satisfied with the action of carbolic acid in such cases, that he "has practically come to limit himself to the use of that alone." He uses crystallized carbolic acid, weakened by water, in the proportion of eighty of the acid to twenty of water, the compound being further diluted by glycerine in equal parts, this being used to swab all outlying ulceration, and being introduced through the cervix into the body of the womb, by saturating with it a thin layer of cotton-wool, tightly wound round a probe of flexible metal. This is to ascribe too great a value to diluted carbolic acid; and Dr. Playfair may well speak of this mode of intra-uterine treatment as being without danger, as little or none of the diluted agent can possibly reach the cavity of the womb. It is useful is cases of superficial uterine ulceration and inflammation without cervical induration, that can be cured by a solution of nitrate of silver or by tincture of iodine; and I consider carbolic acid better than tincture of iodine, but far inferior to nitrate of silver, and useless in cases requiring strong caustics.

Iodine.—It is the simple tincture of iodine that I use, and, since I noticed its utility in uterine affections, volumes have been written upon its use in the diseases of natural or accidentally developed closed cavities. To the simple tincture, Dr. Goodell prefers the saturated ethereal tincture of iodine; and iodo-tannin, or a saturated solution of tannin in tincture of iodine, has been praised. Its local action is that of an astringent, if a slight application be made to the neck of the womb; and of a blister if the application be prolonged for a considerable time, or too frequently made; and if iodine be thus freely applied every third day, the

[1] On Uterine Catarrh. British Medical Journal, December, 1869.

alterative action of the remedy will sometimes reduce hypertrophy of the womb and check the growth of fibrous tumors. After an application of potassa fusa c. calce, it is my practice to dress the sore, and surrounding tissues, with tincture of iodine every third day, for the two subsequent inter-menstrual periods or until the issue has healed. I am convinced the iodine has a share in the good effect thus produced. As an application to uterine ulcers, iodine is not so effective as nitrate of silver; but when this disagrees or makes the sore worse, and in cases of pseudo-membranous ulceration, tincture of iodine is the best application. Iodoform deserves trial in similar cases. I have frequently applied tincture of iodine in chronic inflammation of the lining membrane of the neck of the womb, by painting it well every third day with a sable brush steeped in the tincture; or by passing through the cervix a probe charged with tincture of iodine. The fact that diluted tincture of iodine has been often injected in fistulous passages, hydrocele, and ovarian cysts with the best results, marks it as the best fluid to be injected into the body of the womb in cases of internal metritis, for it has much less frequently been followed by peritonitis than a solution of nitrate of silver. The injection of iodine has caused great pain and enlargement of the womb, but this has subsided in a few days. I use one ounce of the tincture to an ounce of distilled water, or a stronger solution, and I inject it by means of a double current uterine injection syringe. When iodine is to be injected into vulvo-vaginal cysts, it is well to use a concentrated solution, and to inject it while the contents of the cyst are flowing out, so as to insure the passage of the iodine into the cyst, instead of into the cellular tissue. Boinet, who has most extensively used iodine, says it is better than nitrate of silver as an application to the vagina in chronic vaginitis, but I have never found the solution of nitrate of silver to fail me. The same observer mentions having cured intense vaginal blennorrhagia by one swabbing of the whole vagina with tincture of iodine. Another way of using iodine is to order injections to be made once or twice a day with half a pint of tepid water, to which is added from two to three drachms of tincture of iodine. I have found this a good way of keeping the womb under the influence of iodine, when patients are no longer under medical supervision. Iodized collodion is not better than the simple tincture, and iodized cotton-wool is not so good.

Caustic tincture of iodine is a good counter-irritant, the lower part of the belly being painted with it once or twice a week. As a counter-irritant in pelvic pain or inflammation, metallic iodine may be sheathed in cotton-wool, then applied to the skin and covered with adhesive cloth; it gives pain, and may blister the skin.

Chromic Acid.—This acid, so little known to us, is very much used by American practitioners, instead of nitrate of silver, for ulceration of the womb. It is a thick, crystalline pulp, which, when rightly managed, does

not spread beyond the desired limits, and when it has fulfilled its work as a caustic changing into the sesquioxide, which is inert. It must be generally used slightly diluted by distilled water, for we are told to apply it by dipping a glass stick into the acid. I have tried it in several cases where the solid nitrate of silver was indicated, but I do not find that it presents superior attributes. Chromic acid, diluted with an equal weight of water, is sometimes used instead of tincture of iodine to the internal uterine mucous membrane.

Bromine.—I have never used this offensively smelling caustic, but Dr. Routh and Dr. Wynne Williams favorably report on its value in epithelial cancer. The solution used is one part of bromine to three of rectified spirit. This develops heat, and should be prepared before being carried for use. From five to ten minims are injected into the tissues by means of a long syringe with platinum nozzle and rubber piston. We are desired to remember that it may destroy the sense of smell in the operator; and to prevent this disagreeable accident we should stuff our nostrils with alkalinized cotton-wool. While acting as a strong caustic it checks blood-loss and is a powerful detergent.

Nitrate of Silver.—In an admirable book on "Lunar Caustic," Mr. Higginbottom showed its power to cure various forms of cutaneous inflammation. Although the book was published in 1822, the remedy has lost none of its reputation; and Chassaignac's panacea for all wounds is a solution of sixty grains of nitrate of silver in an ounce of distilled water. In the preface to his work, Mr. Higginbottom asked, "as the application of nitrate of silver is a means of subduing external inflammation, whether it might not on the same principle, be of service in the treatment of internal phlegmasia?" Many eminent practitioners have answered the question in the affirmative. Brettonneau and Horace Green have shown its utility in affections of the larynx and pharynx. Velpeau established its value in ophthalmic surgery; Trousseau in infantile diarrhœa; many East Indian practitioners in dysentery; Mr. Curling in the affections of the rectum; and its advantageous applications to the cure of the inflammatory affections of the urethra in the male, has been abundantly established. As regards the inflammation of the mucous membrane of the female reproductive organs, Dr. Jewel, in 1830, strongly advocated its use; and he was supported by the late Dr. Addison, in a little work written to prove that the disciples of Abernethy had lost sight of the ill-effects produced on the system by the continuance of local irritation, and were carrying too far the doctrine of the constitutional origin of local diseases. I have no hesitation in saying that nitrate of silver is the most valuable of all the agents that enable us to cure inflammatory affections of the reproductive mucous membrane.

Modes of Use.—The solution containing forty grains of nitrate of silver to an ounce of distilled water is what I generally use, though

sometimes I employ a solution of two drachms to the ounce, and I see no good in using the ethereal solution of the salt. The solid stick, or that made pliable by fusing the salt with equal parts of nitrate of potash, only needs mentioning. A silver probe, made bright by friction, and coated with nitrate of silver by repeatedly dipping it into nitrate of silver that has been melted by heat, is a convenient way of applying it to the lining membrane of the cervix. The solid caustic is of course more potent than its solution, and should not be applied more than once a week; the solution cures with less pain, but requires to be applied every fourth or fifth day, that is a day or two after the fall of the eschar made by a previous application. In all cases it is prudent to preface the use of the nitrate of silver by linseed-tea, poppy-head, and cooling injections, in the same way that Mr. Higginbottom repeatedly inculcated the utility of cold poultices previous to applying nitrate of silver to the inflamed skin, and if the topic makes the ulcer bleed, it should be replaced by carbolic acid or by tincture of iodine.

Range of Utility.—Chronic uterine catarrh, or inflammation of the mucous membrane lining the neck of the womb, which pours out mucus from its innumerable follicles, is a very frequent uterine disease, and the source or aggravator of many other affections of the womb. Painting this diseased cavity with a paint-brush steeped in a solution of nitrate of silver, forty grains to the ounce, every fourth or fifth day, during one or two inter-menstrual periods, will cure the complaint; but if it has lasted for years, it may require stronger measures. The introduction of the solid stick is then advisable, and the same practice is recommended by Alphonse Guérin in blennorrhagic inflammation of the cervix; but I found that during the last ten years I have less frequently used the solid stick than previously. I have sometimes left about one-eighth of an inch of caustic in the cervical canal, so should the stick accidentally break in the cervical canal it need not excite alarm. What cannot be removed will cause more pain, some loss of blood, and perhaps a return of menstruation; but the patient may be repaid for greater suffering by a speedier cure. This accident, I repeat, need not excite alarm, for it is the mode of treatment that Prof. Courty considers best.

As with the mucous membrane lining of the cervix, so with that covering the neck of the womb: it may be of a fiery red or dusky hue, very sensitive on being touched, and secrete pus without there being the slightest abrasion. This condition may last for years, being sometimes better or worse, but it generally leads to more or less extensive denudation of villi, which gives an excoriated appearance to the lips of the womb, and these exulcerations, if numerous, may coalesce and become ulcerations. Such morbid conditions of the mucous membrane, with or without excoriation, can be cured by the application of a solution of nitrate of silver every fourth or fifth day. I lay stress on this, because

many believe that the application of the solution of nitrate of silver is only advisable in ulceration, whereas there is no better way of bringing back relaxed uterine mucous membranes to perfect health. We can watch this action in relaxed sore throat, and Dr. Eben. Watson, of Glasgow, has remarked that, in cases of chronic thickening and œdema of the glottis, "the nitrate of silver has a derivative action, and soon relieves by drawing out serosity from the œdematous glottis, and that it excites the vessels to healthy nutrition of the tissues." Dr. Watson even recommends the parts to be bathed with the solution, every day, for a fortnight.

Mr. Higginbottom affirms that the action of nitrate of silver on the skin does not extend beyond three days after its application, and that it is generally necessary to repeat the use of this agent so soon as the epithelial pellicle has fallen off, or every third or fourth day. In long standing cases this is the best way of insuring a rapid recovery; but it is often well to leave five, six, or seven days' interval between the applications, or the cure of the case might be retarded; for the too prolonged action of the solid stick might convert an excoriated surface into an ulcer, which would be kept open by the too frequent application of the remedy. The persistence of the ulceration might suggest the urgency of stronger caustics, whereas the ulcer will heal if left alone; this should be borne in mind by the inexperienced, or they will blame the precept for the practitioner's fault.

Whether vaginitis occur spontaneously, or as the result of uterine catarrh, it is best cured by the injection of a solution of nitrate of silver. This is an excellent idea of Dr. Jewel; but if the solution be sufficiently strong to do good, it should not be trusted to the patient. Being placed on her back, a small glass speculum has to be introduced as far as possible, and an ordinary glass syringeful of the solution of nitrate of silver should be injected. The speculum is then to be very gradually withdrawn to the vicinity of the vulva, after the fluid has been left in contact for two or three minutes, then the speculum must be removed, and the fluid received in a small cup. Sometimes I apply a speculum, and as I withdraw it, I pretty freely touch the vagina with the tough nitrate of silver, a modification of the plan recommended by Ricord, and which is most useful in cases of granular vaginitis. Other measures failing, these injections may be tried when there is evidence of inflammation of the womb, with excoriations of its cervix, in virgins, in whom the integrity of the hymen only permits the introduction of a small tube, and this plan should always be tried before incising the hymen. I have made these injections in many cases, and I do not once remember having traced menorrhagia to their administration, though this has occurred in the practice of Dr. F. Churchill. So many serious accidents have followed the injection of the solution of nitrate of silver into the body of the

womb, that I prefer using diluted tincture of iodine whenever intra-uterine injections may be required. It must, however, be stated, that Alphonse Guérin is not afraid of injecting into the womb a solution of nitrate of silver of one grain to the ounce. He insists on the urgency of injecting the fluid gently, after ascertaining that it will have free egress from the uterine cavity; he states that two or three injections effect the cure of chronic blennorrhagic internal metritis, and that during the four years that he followed the practice at the Hôpital de l'Ourcine it never led to bad results. In very rare cases of chronic internal metritis I have deemed it advisable to apply the solid nitrate of silver to the internal surface of the body of the womb by Dr. Lente's caustic-holder, which resembles a bullet-probe. Its silver extremity being well cleaned and heated, is coated with caustic by dipping it repeatedly in nitrate of silver, melted in a deep watch-glass over a spirit lamp.

In chronic follicular inflammation of the labia, in eczema, in prurigo pudendi and pruritus, both external and vaginal, a piece of cotton-wool should be soaked in the solution of nitrate of silver, and carefully rubbed for two or three minutes over the diseased portions of the skin and mucous membrane. Although it is said that bubo is likely to be produced by adding more than one or two grains to the ounce of distilled water, I have not found this occur with my usual solution of forty grains to the ounce, and I can speak with confidence of the plan; for I have cured patients who had been suffering in this way for four, eight, and even thirty years. In the case that had lasted so long, the pudendal skin and mucous membrane looked like parchment. I first applied the solution every day, then every other day, then every fourth and fifth day, until the skin became soft and pliable, and the sleep was no longer disturbed by darts of pain; this patient was cured in three months, and has had no relapse. This is one of the most disagreeable operations one can have to perform; it is well to grease the fingers with cold cream, to prevent their being stained, and to place an old cloth, many times folded, under the patient, or her clothes will be spoilt. After the application, the patient should be told to interfere as little as possible by lotions, so as to prevent the premature removal of the thin medicated membrane, under which the diseased skin is to become healthy. If an abscess of the vulvo-vaginal glands has not been widely opened, so as to allow it to heal from its depth upward, it will be necessary to inject a solution of nitrate of silver, to promote the obliteration of the cavity.

Mode of Action.—I trust I have said enough in praise of nitrate of silver; but in many forms of uterine inflammation, much more severe agents are required to restore the womb to a healthy state. This is admitted by so many authorities at home, in America, and in foreign countries, that it is surprising to find it asserted by Tyler Smith, in his work on leucorrhœa, that "there is no good to be effected by the more power-

ful caustics, which cannot be accomplished by the nitrate of silver, or by other means. It is true that by the prolonged application of the nitrate of silver loss of substance may be caused; but this is far less likely to occur with lunar caustic than with the more powerful escharotics. It is also true that some practitioners apply the more violent caustics so lightly, that they do not exceed the milder medical action of the solid nitrate of silver; but, in such cases, it would be quite as well to use the safer remedy where a caustic is required." My experience, on the contrary, teaches me not only that it is often impossible to obtain a slough with nitrate of silver, but that it is highly injudicious to attempt to do so, for it hardens subjacent tissues, and leads to cervical stricture. Leave a bit of lunar caustic in the neck of the womb, it will cause more pain, loss of blood, and subsequent discharge, but very superficial destruction of tissue. Even when applied to a fungous ulcer, the slight loss of substance is due as much to the friction of a hard body on a pulpy surface, as to the chemical combination of the neutral salt with the diseased tissues. Thus, while nitrate of silver may be repeatedly applied, without inducing other loss of substance than the shedding of morbid epithelium, and the reproduction of a healthy epithelial layer, the slightest application of the potassa fusa to the neck of the womb causes an evident loss of substance; and, therefore, the two agents, applied in similar cases, produce totally different effects. This question has been already decided by experienced surgeons, for Sir Everard Home freely used nitrate of silver in cases of stricture of the urethra; nevertheless, he states that "in cases of failure, from the strictured part having become so hard and thick as not to be destroyable by the nitrate of silver, it is to be regretted that we have not a more powerful caustic, capable of being applied to the urethra, since that alone is required for their removal." Mr. Wade [1] observed, some years afterward, "I cannot let this opportunity pass without again calling attention to the fact, that the effects of the argentum nitratum and of the potassa fusa admit of no comparison, as they are totally dissimilar; that the former, when freely used, from its tendency to cause adhesive inflammation, has often been found to increase the urethral obstruction, whilst the remarkably solvent powers of the latter have no such tendency." When the object is to prevent the spread of syphilis by the destruction of an incipient chancre, some surgeons have recourse to potassa fusa; and one writer observes, "that to use nitrate of silver as a destructive agent, is most unsurgeonlike."

In other words, caustics are not convertible agents; each of them has power to do what cannot be done by the others; one transcends another in the range of its peculiar efficacy, and the specialty of this power should prevent one caustic being indiscriminately used in all cases of ulceration.

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[1] Stricture of the Urethra, fourth edition, p. 117.

The too free use of nitrate of silver to the diseased tissues of the urethra causes urethral stricture, and the too free use of it to the cervical canal causes stricture of the neck of the womb. Indeed, if the whole range of diseases in which the nitrate of silver is now used be passed in review, it will be found that its good effects are due to dynamic, astringent, and antiphlogistic properties; whereas escharotics can only improve the nutrition of any given tissues by some deeper destruction of tissue. There is another advantage to be wrought with the more powerful caustics, which cannot be accomplished by nitrate of silver, that is to shorten the treatment of many cases in which it was *at first* judiciously used. Ulceration of the neck of the womb, on a hypertrophic basis, may doubtless be sometimes cured by the use of nitrate of silver continued for a long time; whereas it can be speedily cured by one or two applications of the acid nitrate of mercury, or by one of potassa fusa c. calce. When the inner cervix is chronically inflamed, nitrate of silver may effect a cure; but so very tediously, that it is better to resort to one or two applications of the acid nitrate of mercury. In fungous and varicose ulceration, the nitrate of silver causes the surfaces to bleed profusely, and does more harm than good; whereas the acid nitrate of mercury and the actual cautery stop the bleeding and promote a cure. I think it right to be sparing of caustics to the neck of the womb in pregnant patients; but I have had cases, similar to those described by Dr. Bennet, in which it was necessary to stop an abundant purulent and bloody discharge from a large varicose ulcer, and I have done so with the acid nitrate of mercury, after doing more harm than good with the nitrate of silver.

With regard to the therapeutic action of nitrate of silver, I may mention that, acting under the advice of one of our best pathologists, Dr. Hanfield Jones, who has found nitrate of silver useful in many singular neuralgic affections, I gave it to a lady for attacks of *incurable* cerebral neuralgia, occurring at the change of life, after many years of uterine inflammation more or less accompanied by hysteria or neuralgia. The patient was ordered pills, containing a quarter of a grain of nitrate of silver, twice a day; the two first purged her violently, and after the fourth had been taken, there ensued very severe pain and swelling of the gums surrounding the eight remaining front teeth of the lower jaw. After a moderate amount of salivation, the inflammation subsided, and in a week the loosened teeth became firm, with the exception of one, that had to be pulled out. I relate the case, because Dr. Hanfield Jones assures me he has never seen a patient salivated by nitrate of silver. A somewhat similar case is, however, mentioned by Sir Thomas Watson, and it is well known that all metallic poisons have a tendency to escape from the system by some part of the digestive mucous membrane.

Ill-Effects of Nitrate of Silver.—I have seen the frequent application of nitrate of silver for a year, to an inflamed cervical canal, to

so narrow the cervical canal as to render dilatation necessary. Nonat and Richet have long ago noticed the possibility of this occurrence, to which attention has been lately drawn by Dr. J. Wallace, of Liverpool, who has met with several cases where the patient's former medical attendants had, in one case for over two years, and in another for eighteen months, passed the speculum twice a week, and "burnt them," as they expressed it; there was atresia in both instances. In other cases partial atresia, with painful cicatrices, resulted; and painful cicatrices, of an inveterate character, were said to have been met with. I will not consider this to be an average specimen of provincial practice, for it would be deplorable to think that one set of practitioners should be preparing cases for others, who are only too much inclined to slit the womb. In some cases of chronic ovario-uterine inflammation, with the occasional occurrence of spontaneous sexual orgasm, I have known this to be brought on by the use of nitrate of silver.

In pseudo-membranous inflammation of the neck of the womb and of the vagina, nitrate of silver acts as a poison. In a case lately under treatment, there was a small patch of false membrane on the posterior lip of the os uteri, and around it numerous ulcerations. Had I touched them with nitrate of silver, they would soon have been covered with false membranes; but tincture of iodine did not produce this effect, neither would potassa c. calce; they are, therefore, the best means of curing this most tedious but rare complaint, of which Dr. Bennet has seen about thirty instances in ten years. Occasionally we meet with cases in which an extensive superficial excoriation of the neck of the womb bleeds profusely, even for the two following days, when only touched with the solution of nitrate of silver, which inflames the sore. In another case, freely swabbing the outside of the slightly excoriated cervix peeled off its epithelium, and made an angry, bleeding, and painful sore. In some cases, I have often effected a cure by applying the acid nitrate of mercury, and by afterward dressing the wound with tincture of iodine.

Nitrate of silver applied to chancres of the neck of the womb in their acute stage, causes them to become fungous and to resemble epithelioma. Cases have been published, as chancre developed on a cancerous basis, which were only instances of chancre rebelling against caustic treatment, and amputation is said to have been performed in such cases, both in Germany and in Paris.

In one of the numbers of the *Obstetrical Journal* of London for 1877, there is recorded the case of severe ulceration of the cervix during pregnancy, which was successfully treated by nitrate of silver. The healing tendency was so great in this case, that when labor set in, a fortnight after the last application, the os uteri was found closed, and had to be opened by the knife to permit the completion of labor.

On the Use of Strong Caustics.

That strong caustics can be applied to wounds, without adding fuel to the fire, is doubtless singular; nevertheless, while steel-made wounds are often followed by purulent absorption, lymphangitis, inflammation, and phlegmonous inflammation, these secondary affections seldom attend wounds made by caustic. The knife reduces the temperature of the diseased surface by emptying its blood-vessels, and leaves the open orifices of veins and lymphatics to bathe in the decomposing fluids; whereas caustics obliterate the lymphatics and veins before pus and fetid fluids have been formed, and rather increase than diminish the temperature of the part. Caustics are evidently substitutive agents, for besides the destruction of one portion of the diseased tissues, the remainder is converted into a simple, acutely inflamed ulcer, in which the standard of vitality is raised to so restorative a pitch, that it rapidly heals. When ulcers have become chronic, they are generally covered with a thick, luxuriant growth of irregularly developed epithelial cells, and the destruction of this upper growth by caustic, places the old ulcer in the condition of a fresh wound earnestly striving to heal. If an eschar about two lines in depth, and of about a shilling in diameter, be made by potassa fusa c. calce in an hypertrophied neck of the womb, it will frequently occur that, during the ensuing month, while the ulcer is healing, the neck of the womb becomes gradually softer and diminishes in size, the fibro-interstitial deposit melting away, and the uterine structure resuming its healthy elasticity. I have indeed occasionally known this to happen within eight days of the application of caustic. When paralyzed by some morbid influence, the vaso-motor nerves let the vessels dilate, so as to produce congestion and hypertrophy; and it is probable that the application of caustic, and the subsequent dressings of the wound by the solution of nitrate of silver, restores the tone of the paralyzed nerves, makes them contract the afferent capillary vessels, and thus cures congestion by stopping the supplies. At all events, whenever there is a morbid process going on in congested tissues, whether they be ulcerated or not, caustics are the most powerful modificators of nutrition, as was first suggested, I believe, by Dr. Filhos, in 1847. It was afterward stated by Lebert, "that life and nutrition become more energetic whenever assailed by the partial destruction of tissue, and that this explains the rapid healing of internal ulcers to which Vienna paste is applied." Mr. Wade also remarked that "Potassa caustica appears to act beneficially upon stricture by relieving irritability and inflammation, by promoting absorption, by stimulating the congested vessels to contraction, and by its dissolvent powers." And again he says: "It has always appeared to me, that the great value of the caustic potash consists in its

powerful solvent effect upon the tissues forming the obstruction;" and he truly adds, "had potassa caustica been called a *solvent*, instead of a caustic, it would have been accepted by those who are too prejudiced to adopt it." It is well to thus thoroughly explain what is understood by the solvent or melting properties of the strong caustics, for evidently Tyler Smith could conceive no other melting away of fibrous-plastic deposits in the neck of the womb, than by the absolute mutilation of the cervix. So much on the twofold effects of strong caustics—the destruction of redundant and the softening of hypertrophied tissues—now I must briefly relate their specific uses and abuses.

Acid Nitrate of Mercury.—This was introduced by Récamier, and was the only caustic used by Lisfranc, and was often resorted to by Velpeau, who tried to apply it to the inside of the womb. This is still the caustic most frequently used by French practitioners; it is frequently employed in the treatment of lupus and of atonic ulcers of the leg; it was Mr. Startin's favorite remedy in many diseases of the skin. It is an hæmostatic, like all acid caustics, coagulates the blood that may exude from the surface of an ulceration, and is therefore well suited as an application to fungous or varicose ulcers, and to such as have an unhealthy aspect. I apply it to the cervical canal, when nitrate of silver fails to cure endo-cervicitis, with hypertrophy of the surrounding tissues. To apply this caustic, after carefully drying the ulcerated surface with cotton-wool, I place a pledget of it near the rim of the speculum, moistened in a solution of bicarbonate of soda, to protect the vagina from the acid; then I steep a small piece of cotton-wool in the caustic, and, after well pressing it against the neck of the bottle, I apply it firmly to the diseased surface. A white eschar is thus made, which should be left to dry for a minute or two. It falls off on the sixth or on the seventh day, so it is advisable to leave ten or twelve days between two applications. If the caustic is to be applied to the cavity of the cervix, a small sable-hair pencil should be used, or a stick of glass, or a probe coated with cotton-wool. With some patients this caustic has not a stronger action than nitrate of silver; others soon experience a metallic taste in the mouth, just as some *taste* iodine soon after it has been applied to the womb. Salivation, or an attack of dysentery, has been observed in very susceptible subjects when the caustic has been applied to a large surface; should this be necessary, only a portion of the ulcer should be first touched, then another, at a few days' interval. I once applied acid nitrate of mercury with due care; but in the evening the patient was taken with severe pelvic pains and incessant passing of blood by the bowels. This lasted two days, notwithstanding the exhibition of opium and acids. The patient had purulent uterine discharge for a few days, was convalescent in a week, and never suffered from uterine disease during the following eighteen months. The possibility of such accidents sufficiently

explains the necessity of recommending the patient to keep very quiet after the application of the caustic. The same agent was freely applied to a varicose ulceration of the cervix of this lady's sister, when three months pregnant, and the application was only followed by a little pain. A case has been published, in which a similar application to the cervix was soon followed by severe hypogastric pain, nausea, diarrhœa, and, within a few days, by a mild attack of stomatitis and salivation. If this little operation leaves bridles in the vicinity of the os uteri, it shows that the caustic has been allowed to run on to the vagina by an unskilful operator. Strong nitric acid, saturated with nitrate of silver, is a good caustic, analogous to the preceding, and doubtless both owe their causticity to the free nitric acid, while the metals give them well-recognized alterative properties that the pure nitric acid does not possess.

Nitric Acid.—Fuming nitric acid has been extensively lauded for the treatment of piles by Mr. Henry Smith, and we all had applied it to vascular tumors of the urethra. It had been used twenty-five years ago, by Dr. E. Kennedy, as a topical application to uterine ulceration. Dr. H. Bennet, Dr. Ringland, and Dr. Marion Sims have done the same; but Dr. Kidd, of Dublin, was the first who had the courage to apply it freely to the inside of the womb. In 1874, Dr. Goodell had not only used it to the cervix, but also freely to the uterine cavity in internal metritis, leading to menorrhagia and obstinate leucorrhœa; to Dr. Lombe Athill, however, we are chiefly indebted for the knowledge of its great value. Its value in internal metritis could not be known so long as the acid was only introduced into the womb by a thin film of cotton-wool round a thin wire probe, or when applied by a ball of cotton-wool held by the speculum forceps, for the inside of the cervix got the acid. Dr. Athill has given the following instructions for the application of the fuming nitric acid. "In all cases, the cervical canal should be, if possible, protected, and this no matter whether the cervix has been previously dilated or not; for not only, if this precaution be omitted, will the lower segment of the cervix be most freely cauterized, but also much of the caustic will be pressed out by contact with the cervical walls, and what remains weakened by admixture with the cervical discharge. Consequently its action on the interior of the cavity of the uterus will be greatly lessened. In the majority of cases in which I have hitherto deemed it necessary to have recourse to the intra-uterine application of nitric acid, I have in the first instance dilated the cervical canal so fully as to permit a digital examination of the interior of the uterus, because the patients had suffered from repeated attacks of uterine hemorrhage, the cervix being healthy, while the body was enlarged, and therefore I could not with certainty pronounce that the bleeding did not proceed from the presence of a polypus, or fibrous tumors. When, therefore, it is decided that nitric acid be applied, after previous dilatation of the cer-

vical canal, I seize the anterior lip with a vulsellum, and thus draw down and steady the uterus; then I introduce the blades of my vulcanite intra-uterine speculum to the depth of about an inch, and expand them slowly to an extent sufficient to permit a pair of fine forceps, holding a roll of cotton, to be introduced. With the cotton I dry the inner surface of the uterus, and, withdrawing the cotton, pass through the speculum a probe, armed with a roll of cotton saturated with the fuming nitric acid. I usually have two probes thus armed, and, as a rule, use both, so as to insure the thorough cauterization of the interior of the uterus. The blades of the speculum are now closed. A pledget of cotton soaked in oil, or better in glycerine, is placed in the vagina, a strong thread being attached to facilitate removal, the lip freed from the grasp of the vulsellum, and the patient put to bed and kept quiet for some days." But cases occur in which the previous dilatation of the cervix is not necessary. To attempt to treat these by the "passing up to the fundus of the uterus, a probe wrapped in a thin film of cotton, saturated with acid," seems to me useless; for the cervical canal will be thoroughly cauterized, while little, if any, of the acid will reach the fundus. I therefore have devised an instrument to suit such cases. It consists of a canula of platinum, two inches in length, of the size of a No. 8 catheter at the distal extremity, but enlarged to that of a No. 10 catheter at the end next the handle, which end is also furnished with a narrow disc, to prevent the canula slipping into the uterus—an accident very liable to occur when the uterus is enlarged, and the cervical canal patulous. To this canula is adapted a curved stilette ending in a bulb, which fills the extremities of the canula accurately; the stilette is fixed to a boxwood-handle eight inches in length. The canula fixed on the stilette may be passed into the uterus just as a sound ordinarily is; the index finger of the left hand being kept in contact with the disc, so as to prevent its slipping out of the cervical canal, the stilette is withdrawn. A Ferguson's speculum is then introduced, and a long uterine probe, with a little cotton rolled round it, dipped into the agent selected, is passed through the canula into the uterus. The probe and canula can be withdrawn together. In many cases the speculum can be introduced first, and the canula inserted through it. The introduction of the canula is generally a matter of no great difficulty, for in suitable cases the cervical canal is generally patulous. This simple method enables us to carry our caustic to any portion of the interior of the uterus we may decide on treating, without its being weakened by coming into contact with any other part, and at the same time to protect from its action any portion of the cervical canal we may deem it wise to avoid. I have never dilated the cervix, with the view of applying nitric acid, more than twice in the same patient, but when the canula is used, it may with safety be reapplied, if necessary, after the occurrence of the next menstrual period.

Range of Utility.—What I have stated relative to the utility of the acid nitrate of mercury in obstinate cases of endo-cervical inflammation, applies to fuming nitric acid, and Mr. Braithwaite, of Leeds, is right in representing that many cases treated by nitrate of silver would be better and more speedily cured by the use of the fuming nitric acid. He was independently led to this conclusion from extensive use of it among women of the working classes, where cure could be ascribed to nothing else but to this local treatment. The chief value of fuming nitric acid is for the treatment of the various forms of chronic internal metritis, which are so often misunderstood, and meet with haphazard treatment. Instead of scraping away "proud flesh" by means of a curette, or placing a bit of lunar caustic to melt in the inner womb, and instead of intra-uterine injections, it will I think, come to be recognized that Dr. Athill's operation is the best mode of treatment, provided there be no signs of peri-uterine mischief, and that uterine congestion be previously relieved by local depletion.

This mode of treatment has been known to favorably modify that ill defined state of the uterine mucous membrane which leads to the pullulation of polypi; and, singular enough, the fuming nitric acid has been found to control hemorrhage caused by fibrous tumors, when embedded in the uterine tissues.

Possible Accidents.—Unless due precautions are taken, adhesive inflammation may set in and close the os uteri. Dr. Wallace, of Liverpool, informs me that one application of the acid to the cervical canal has been followed by atresia of the cervix, so I was justified in suggesting to Mr. Braithwaite that, when this agent is applied inside the cervical canal, it is well not to leave the patient a month without examining her. There seems to have been a singular immunity from serious accidents in Dr. Lombe Athill's practice, but he always keeps his patients in bed for twenty-four hours after the operation, and much longer if there be a persistence of pelvic pain.

Potassa Caustica and Potassa Fusa c. Calce.—Potassa caustica was first used for the removal of cancer from the neck of the womb by Récamier; Gendrin first tried this caustic in non-malignant disease of the womb, and it is still habitually used for the same purpose by Dr. Whitehead. Vienna paste—that is, potassa c. calce, or powdered caustic potassa, mixed with from thirty to fifty per cent. of quick-lime, made into a paste by mixing it with alcohol—had been long used by Récamier for the treatment of uterine disease, when Dr. Filhos had the happy idea of melting two portions of lime and one of potash into the shape of a stick, which could be easily handled, and has been principally used by its inventor and by Amussat. Without rendering it less manageable, Dr. Bennet increased the efficacy of this agent by combining two portions of potassa with one of lime. I prefer this to the caustic potash; but I shall

discuss the merits of both caustics at the same time, because their chemical action and their therapeutical results are similar, although not identical. They differ as the concentrated differs from the diluted sulphuric acid, and as this latter is generally used for medicinal purposes, so potassa fusa c. calce is best for uterine surgery. It fortunately happens that two sets of observers, without being aware of each other's labors, have studied the effects of potassa fusa during the last thirty years; for while surgeons were treating stricture by potassa fusa, Récamier and his pupils were testing the effects of potassa c. calce on ulcers of the womb, and these observers agree in their conclusions.

The use of potassa fusa c. calce in the treatment of uterine disease, suggests to those who have not used it, extensive destruction of tissue. That such erroneous notions should be generally entertained is not surprising, since some who profess to be conversant with the action of this caustic, confound it with that of potassa caustica. Potassa fusa c. calce melts down tissue so slowly, that in cases of fungous or unhealthy ulceration on a hard, hypertrophic basis, I have repeatedly found how very difficult it is to cause a sufficient loss of substance by means of this caustic; and in such cases, instead of the potassa c. calce, I occasionally use potassa caustica, a much more powerful agent, which really does melt down tissue, or chloride of zinc. The fact is, that in potassa fusa c. calce, the caustic is effectually fettered by the fifty per cent. of lime with which it is combined, so that it can be used with the same facility as the lunar stick. Potassa fusa c. calce is therefore an agent capable of being applied superficially; and, even when more energetically used, the tissues are only destroyed very slowly, layer by layer. I do not, of course, deny that it would be possible, by the long-continued friction of a large piece of potassa fusa c. calce against the neck of the womb, to cause considerable loss of substance; but the very difficulty with which this result would be obtained, and the time it would take, shows that it is little calculated for the speedy destruction of tissue. Dr. Bennet, who advised the application of potassa fusa c. calce to the hypertrophied womb so as to produce a deep slough, does not admit that any good is effected by the real destruction of tissue that ensues; and explains solely by the inflammation subsequently set up by the caustic, the subsequent diminution of the hypertrophied cervix. In this he seems over-anxious to ally prejudice against the caustic treatment of uterine disease, for I cannot understand how a deep slough can be obtained without real loss of substance in the first instance, and a subsequent loss by the suppuration which follows. My experience thus coincides with that of Dr. Philippeaux, who, comparing the effects of both caustics on the many diseases to which they have been applied, says of potassa fusa c. calce, that it does not run like potassa caustica, so that its action can be well limited; that the phenomena attending the elimination of the eschar are more active, the wound firmer,

redder, giving less suppuration, and that for these reasons it is destined to replace potassa caustica. Although I seldom use this agent, I think Dr. Routh has singularly exaggerated its ill-effects, in stating that it produces an ulcer as difficult to cure as that which it was intended to heal; for, leaving out of the question Dr. Bennet's and my own experience, this agent could not have been employed so extensively by Simpson and his pupils if it made ulceration more permanent; and Mr. Wade would have long ago given up its use for the cure of those urethral indurations which cause stricture.

With regard to its use in general surgery Dr. Blanc when relating what he lately saw in the Toulon Hospital, says: "The caustic paste had its trial on a limb literally turned into a bag of pus. Thirty caustic issues were applied, extending from the ankle to the hip, and the dying man recovered. This success was so complete that during the remainder of my stay not one case of amputation took place on account of diffuse cellular inflammation. I have never seen the remedy fail. When applied late, and when destruction of the cellular tissue had already partly taken place, the mortified parts were first partly eliminated through the openings made by the caustic. But in less advanced cases, however intense the phlegmonous inflammation might be, if no mortification was present shortly after the applications of the caustic paste, plastic inflammation would supervene. The pus was rapidly absorbed and prompt recovery was the result."

Another Indian officer, Dr. Fleming, found in potassa caustica an unfailing means of curing the obstinate sores known in India and in Syria as the Delhi or Damascus sore and the Aleppo evil.

Potassa fusa is a valuable means of safely opening pelvic abscesses, for adhesive inflammation spreads all round the eschar formed by the caustic. I have cured an ovarian cyst by the repeated application of the caustic potash so as to open the cyst, after the establishment of adhesive inflammation between the opposite peritoneal surfaces all round the opening. I have cured vomiting, which yielded to no other remedy, by the application of caustic potash to the epigastrium and by keeping the wound open. This caustic is used for the cure of indolent ulcers of the legs; and has been highly praised as an application to reduce the size of enlarged tonsils. Mr. Whately first showed the practicability of safely destroying the gristly texture of chronic stricture of the urethra by potassa caustica. This plan of treatment has been sanctioned by Prof. Lizars, and by Dr. Gross, of America; its advantages have been admitted by Mr. Campbell De Morgan, Mr. Henry Smith, Mr. Le Gros Clark, and were powerfully advocated by Mr. Wade.

Range of Utility.—When there is an unhealthy condition of the lining membrane of the neck of the womb, without ulceration so far as it is possible to ascertain, but nevertheless undermining the patient's health

by constant discharge and pain, I try in succession tincture of iodine, nitrate of silver, and the acid nitrate of mercury; and if these fail, I pass the stick of potassa fusa c. calce into the neck of the womb, leaving it in contact from fifteen to thirty seconds. When there is a more or less extensive fibro-plastic deposit or hypertrophy of the os cervix, leading to repeated ulceration and to the persistence of uterine symptoms, Lebert truly says of these ulcers, that they will not heal of their own accord; for they require the knife, compression, or caustic. They may be indeed sometimes healed over by the nitrate of silver and the acid nitrate of mercury, but the surface will again ulcerate unless a layer of the unhealthy uterine tissue be removed by potassa fusa c. calce. The disappearance of the hardness depends, however, not only on the destruction of a small portion of tissue, as on the subjacent absorbents being stimulated to improved action. If, notwithstanding the subsidence of all inflammation, hardness still remains, I renew the application after an interval of three months, for until the fibro-plastic deposit be absorbed, the superposed mucous membrane will again ulcerate. This is the safest mode of treatment, but it may require to be spread over six months or longer. When time is an object, and when there is a large amount of fibro-plastic deposit, it may be preferable to melt down at once a larger portion of the hardened tissues by means of the potassa caustica or the chloride of zinc, instead of by repeated applications of the potassa c. calce at long intervals.

In those forms of highly irritable ulceration with soft hypertrophy, which are differently described by authors as a soft engorgement of the neck of the womb, with frequent sanguineous discharges; as a doughy, boggy swelling of the womb; or as an erectile condition of the womb; it is seldom advisable to irritate the diseased surface by repeated applications of the solid or liquid nitrate of silver, which would increase the suffering, the discharge, and the extent of the ulceration. The speedy destruction of a diseased surface, and the increased activity of nutrition with which the subjacent tissues have become endowed, is what is wanted in such cases, and there is no better agent than the cautery or the potassa fusa c. calce. In like manner, Mr. Wade has found that "the good effects of potassa fusa are often strikingly manifested in highly irritable and very vascular strictures, which readily bleed upon slight pressure of the bougie. In many cases three or four mild applications of the caustic will be found to remove both their irritability and their hemorrhagic disposition, and to render them dilatable."

In pseudo-membranous ulceration of the neck of the womb, there is no better application than the potassa fusa c. calce, dressing the sore afterward with tincture of iodine. Simple hypertrophy of the neck of the womb, without any morbid condition of its mucous membrane, may cause many distressing symptoms, and be so little influenced by leeches, scarifications, astringents, mercury, and iodine, that it may be advisable

in some cases to seek to effect a cure by applying an issue to the hypertrophied tissues. When I want an issue on the healthy mucous membrane covering a hard hypertrophied cervix, just as issues are applied to the skin, potassa fusa c. calce is not sufficiently powerful; and as the object is to produce a speedy and a deep loss of substance, I prefer potassa caustica or the chloride of zinc. While the wound is healing, I freely saturate it, as well as the tangible portions of the womb, with tincture of iodine, every third or fourth day. It will thus be seen that I seldom use potassa caustica; and I strongly advise those who are feeling their way in the treatment of uterine disease by real caustics, not to try it until they have familiarized themselves with the use of potassa c. calce, which is so much more manageable.

Amussat has even recommended the application of potassa fusa c. calce to the inside of the womb, in cases of chronic internal metritis leading to repeated flooding, stating that he has often done so with success; but in such cases the womb had better be treated by the fuming nitric acid, as I have already intimated.

Amussat having seen uterine cauterizations unintentionally produce the replacement of a retroverted uterus, by causing the neck of the uterus to adhere to the vagina, purposely cauterized the neck of the womb and the corresponding portion of the vagina, and thus succeeded in setting right a retroverted uterus, and in curing dysmenorrhœa, neither did the results of the operation interfere with parturition. He was not so successful in other cases, and his example does not deserve imitation. I think better of Professor Faye's, of Christiania, suggestion for the cure of retroflexion of the womb, and it is reported to have given favorable results in his hands. He cauterizes the inner cavity of the cervix with the stick of potassa fusa c. calce, with the view of rendering it subsequently less liable to inflammation, and to enable it to bear, with impunity, the presence of a stem-pessary.

This caustic has been applied to the vagina to narrow its diameter, and to better support a prolapsed womb; the acid nitrate of mercury has been used for a similar purpose, but I prefer the removal of a longitudinal strip of the vagina to the use of the caustics, in the rare cases requiring such measures. This caustic has likewise been recommended as the best for pudendal esthiomene, a disease akin to lupus. When the neck of the womb simulates prolapsus, and is so long as to interfere with active exertion, or with matrimonial intercourse, I have twice removed about an inch and a half by potassa caustica, and the patients did well. There was no great loss of blood, and the relief was as effectual as if the knife had been used, but the removal by the ecraseur of the redundant portion of the cervix is a better operation.

Dangers Attending the Use of Potassa Fusa c. Calce.—Great confusion has been created by those who have confounded the results of

the application of potassa fusa c. calce to the neck of the womb with those of potassa caustica, applied under similar circumstances; so I shall carefully distinguish the results of both caustics.

After cauterization by potassa fusa c. calce, all habitual abdominal pains may be increased, sometimes to an alarming extent, without peritonitis; for if this were present, the pain would not so soon yield to a large warm linseed-meal poultice, well sprinkled with laudanum; to vaginal injections with a pint of warm water, containing a dessert-spoonful of laudanum; and, what is better still, to the passing up the rectum a suppository containing two grains of opium. Slight fever may ensue, soon yielding to low diet, effervescing draughts, and to purgatives. Potassa fusa c. calce applied to the neck of the womb has a strangely depressing influence on some patients, without this exhaustion being caused by pain. I have known the loss of power to last, more or less, for two or three days, and to produce fainting, a symptom noticed by Prof. Rust, of Berlin; but I have not seen debility assume an alarming aspect; and diffusible stimuli, wine, or brandy in small quantities, will correct the exhaustion, which seldom lasts more than a day or two. I have already related how the application of potassa fusa c. calce brought on a return of hysterical insanity; in another case it induced a cataleptic fit every night for a fortnight. As a rule, one may look out for the recurrence or the aggravation of the symptoms to which the patient has been most liable through life.

Acute inflammation of the body of the womb is the accident one would expect as most likely to occur, but I have only once observed it. It was not owing to any fault of the patient, for she remained in bed; the womb swelled to the size of an ostrich's egg, it was not very painful, neither was the vaginal discharge of an acrid nature, neither was there much fever. Eight leeches to the abdomen, and hot poultices, reduced the swelling in a fortnight, and the patient made a good recovery. Gendrin and Richet have met with this accident, but I do not remember its occurrence being mentioned by other authors. Flooding I have observed several times in those subject to metrorrhagia, and occasionally there will be a slight oozing of blood from the wound left by the fall of the eschar. This might be detrimental were it not stopped by styptic injections, or by a slight application of perchloride of iron. I have once seen the use of this caustic followed by a sharp attack of pelvi-peritonitis, and I suspect that this occurred in another case, but both patients recovered without permanent damage. Dr. Bennet has twice seen potassa fusa c. calce, applied by himself, followed by pelvic abscess. Gendrin and Dr. West have seen several cases brought on by the same cause; and Dr. Aran has known it to produce ovaritis, which proved fatal after many months of suffering. It has caused death by acute peritonitis in a case of Dr. Sirédey's, and in two of Dr. Bernutz's.

Partial or complete retention of the menstrual flow I consider to be

an avoidable result of cauterization of the neck of the womb with potassa fusa c. calce. This accident may depend upon too severe cauterization of the cervical canal, or on the operator's neglecting to pass a paint-brush or a sound through the os uteri and into the cervix every fourth or fifth day until the recurrence of the catamenia, or on the patient's neglecting to apply for treatment. In a patient on whom I made an energetic application of potassa fusa c. calce to the os uteri, and who did not attend to have the wound dressed, very severe pain occurred at the next menstrual period, without the flow making its appearance. At the following period the pain was so intense that she came back to the Farringdon Dispensary, and, on examination, there was a livid mark in a membranous tissue covering the os uteri. I made a small crucial incision, which gave issue to a teacupful of dark syrupy blood. It was sufficient to touch twice the edges of the divided tissue with nitrate of silver to prevent the recurrence of the accident, and there was no further impediment to the menstrual flow. Similar cases have been seen by Drs. Bennet, M. Sims, and Mr. Williams—London *Medical Gazette*, 1850. In these cases, the obstacle was formed by a membranous tissue uniting the lips of the os uteri, for it was easily divided. Once I have had to divide this membrane, five years after the cessation of menstruation, to free an accumulation of uterine mucus, and in two other cases I believe moderate, but frequently recurring pelvic pains were induced by closure of the uterine mouth, the result of the removal of small polypi by potassa fusa c. calce.

This was done by me to a lady, when about sixty years of age, and I allowed the os uteri to close. When in her seventy-fourth year, she was seized with very severe pain in the left ovarian region, with nausea, and symptoms of pelvi-peritonitis. She lingered on for a few weeks. There was no *post-mortem* examination, but I connect the disease with the less intense occasional pain that occurred in the same region during the previous ten years, and I lay it down, as a rule, that the freedom of the cervical canal should not be compromised by caustic applications, whatever may be the patient's age. If too much potassa fusa c. calce were applied to the cervical canal, it might lead to the agglutination of the walls of the canal by adhesive inflammation, and to a permanent, or an occasional obstruction of the menstrual flow, necessitating its dilatation, unless the case be properly attended to while healing progresses. This has been noted by Dr. Bernutz, although, strange to say, the application of strong caustics to the cervical canal is not even mentioned as a cause of uterine stricture in Simpson's lecture "On Obstructed Dysmenorrhœa." An Indian surgeon, an enthusiastic pupil of Dr. H. Bennet, told him that he had found potassa fusa c. calce quite sufficient to cure chronic uterine disease, without any subsequent probing of the cervical canal and dressing with tincture of iodine. Dr. H. Bennet had subsequently to treat for cervical stricture half a dozen of this gentleman's cases, so it is best to look well

after the cervical canal. The fibro-vascular tissue of the womb differs from that of the vagina, which is only a modified skin, so that while potassa fusa c. calce, when applied to the os uteri, leaves no trace after a few months, unless loss of substance has been considerable, this caustic, if applied to the vagina, will severely inflame it, and produce bridles of nodular tissue like the cicatrices of severely burnt skin. The thickness of these adventitious bands will be proportionate to the amount of caustic allowed to run; those I have seen were slight, and I have never met with firm adhesions strongly binding down the womb to the vagina after the use of potassa fusa c. calce. I believe they are always caused by potassa caustica, and, while admitting that, if firm and extensive, they might interfere with parturition, those I have seen have not interfered with the patient's health, or with parturition.

It has been objected, that the death of a patient has been caused by strong caustic perforating the vagina behind the posterior lip of the uterus, fatal peritonitis ensuing; and I can understand the occurrence from the use of too much potassa caustica; but to produce such a result with potassa fusa c. calce could only be a wilful act of the operator. One might as well object to the application of the acid nitrate of mercury, with a paint-brush, to an ulcer of the os uteri, because, in a case recorded by Boivin and Dugès, a surgeon perforated the vagina, by leaving behind the posterior lip of the os uteri a lump of lint soaked in this caustic. It is mentioned by Dr. Nonat, that out of twenty-eight applications of potassa fusa c. calce made by Richet, one patient was flooded, two suffered from acute metritis, and three had pelvi-peritonitis. In the absence of all details, I can only express my surprise at such results, nor do they agree with Dr. Nonat's own experience of potassa fusa c. calce. I have recorded all I know against the use of potassa fusa c. calce, and if, after reading the list of accidents attendant on its use, it should be said, "Why play with a two-edged sword?" I reply, that I know of no other way of curing the chronic diseases I have specified, and which would not be sent to me as incurable if the immense value of strong caustics in such cases was known to the profession.

Till I took the trouble to do so, the dangers attending the use of potassa fusa c. calce had not been sufficiently dwelt upon; this is the best way to prevent avoidable accidents, so I shall not apologize for the minuteness with which I shall now proceed to point out the precautions to be taken in using this caustic.

Mode of Applying Potassa Fusa C. Calce.—Comparing potassa fusa c. calce with the chloride of zinc and other strong mineral caustics, Dr. Philippeaux extols the former caustic, because, although energetic, it gives little pain, produces slight reaction on the adjacent tissues, and gives rise to compounds that have no dangerous action. To a great extent, this is true of potassa fusa c. calce when applied to diseased uterine

tissues, and I believe it would be followed by few accidents if the patients kept quiet for the few following days, and if the remedy were never applied without a previous searching examination of the pelvic organs, to make sure that there is no inflammatory action lurking in the vicinity of the womb; this should never be lost sight of by the practitioner, whenever he intends to take a strong caustic in hand. From neglecting this golden rule, I have seen chronic ovaritis become an abscess, and cause death by bursting into the peritoneum; in other instances it has made chronic pelvi-peritonitis become acute. Aran has also seen both the potential and the actual cautery cause death by acute peritonitis in several patients, in whom the previous existence of inflammation of the ovary and oviduct has been overlooked. It is likewise injudicious to apply the strongest caustics without having previously tested the susceptibility of the uterine tissues in each particular case, by the previous use of the milder ones.

With respect to the time to be chosen for the performance of the operation, it is well not to fix on a day too near a menstrual epoch. About the fifth day after a menstrual period has long been considered the fit time for this operation, both by Dr. H. Bennet and myself. More than once, however, I have applied potassa fusa c. calce to the neck of the womb a few days after menstruation was due. The caustic acted as an emmenagogue, bringing on an unusually abundant flow. The physiological function and the therapeutical process did not interfere with each other, and there was a singular immunity from pain. Another point of great importance is, never to apply potassa fusa c. calce, and still less potassa caustica, unless the diseased part of the womb can be brought well into view, and easily retained there. Before the uterine tenaculum had been invented, a lady had been under my care for hypertrophy of the neck of the womb, with an inflammatory condition of its internal lining membrane, causing yellow discharge, constant abdominal pains, nausea, and hysterical symptoms. I improved her state by the use of nitrate of silver and the acid nitrate of mercury; these remedies were, however, insufficient to cure: the womb was so anteverted that I could not safely apply potassa fusa c. calce, so I sent her out of town for three months, to recruit her general health; when she returned, the womb had so far recovered its right position, that I could bring it fairly into view; and one application of the potassa fusa c. calce completed the cure.

The patient being so placed on a sofa, or on a hard bed, that full light may be thrown on the spot to be operated upon, a smooth bit of potassa fusa c. calce should be chosen, one without efflorescence or loosely adherent particles, and therefore not liable to break or splinter during the operation. This is of importance, for I have known a loose particle of the caustic fall on the labium and cause a small ulcer, which gave

greater pain to the patient than the much more severe uterine application. When the caustic is fixed in a long-handled caustic-holder, the operator has full control over it, and does not feel afraid of its falling from the speculum forceps, which it might do when that instrument is used. One or two thin, elongated pledgets of cotton-wool should be steeped in vinegar and water, well pressed to free them from all surplus fluid, and neatly jammed between the rim of the speculum and that portion of the neck of the womb on which it rests, so that they may combine with any caustic solution which might accidentally run down to the vagina, severely inflame it, and cause cicatricial bridles.

These preparatory steps being taken, I dry, with cotton-wool, the spot to which the caustic is applied, for as moisture is the solvent which will let loose the corrosive agent, too much moisture will cause it to run, and prevent its limitation to the cervix uteri. Then, firmly grasping the caustic with the holder, I gently press it to and fro on the diseased surface for from half a minute to a minute, according as a slight or a deeper action is desired, or until the operation is interfered with by the surging up of blood from the capillaries—blood which remains liquid, because it is the property of all alkaline caustics to liquefy the blood. I then withdraw the caustic, soak up the blood with cotton-wool, and dry the eschar, to ascertain what has been done. If further loss of substance be necessary, I again take in hand the caustic, after wiping it with cotton-wool, and again rub it on the part already cauterized. It may even be necessary to repeat this surface-contact of the caustic three or four times with the same precautions, and, at last, after carefully absterging the eschar, I remove the acidulated dossils, and introduce a much larger one, well saturated with vinegar and laudanum, and made sufficiently large to overlay the eschar at every point of its circumference, so as to protect the vagina from any uncombined caustic which might still remain upon the eschar. This cotton-wool cake should be firmly pressed against the eschar by the speculum forceps, while the speculum is being withdrawn; round this dossil should be fastened a bit of twine, the ends of which are tied together in a loop, left sufficiently long for the patient to be able to withdraw it herself after a few hours. As potassa caustica breaks down more tissue, and as some portions of it may remain uncombined in the midst of the pulp it has produced, acidulated water should be freely injected into the vagina; and, as a preliminary step, it is well to whiten, with the solid nitrate of silver, all such portions of the neck of the womb as the melting caustic might possibly run upon. When the cervix is hard, and covered by a perfectly healthy pale mucous membrane, its epithelium should be previously destroyed by one or more applications of nitrate of silver, or the application of the potassa fusa c. calce will be most unsatisfactorily superficial.

When potassa fusa c. calce is introduced into the cervical canal, the

outer portion of the stick is immediately dissolved by the mucus, so that it is judicious not to leave the caustic in contact so long as when it is applied outside the neck of the womb: ten seconds may suffice, but a much longer time may be required. If a mere cold-water vaginal injection has been known to cause peritonitis, it stands to reason that it is impossible to apply an heroic remedy to the neck of the womb without running the risk of a temporary aggravation of suffering, and of inducing complications which may be far more serious: therefore the application of potassa fusa c. calce to the neck of the womb must be spoken of to the patient and her friends as an operation to be followed by an aggravation of the habitual sufferings, and by much more dangerous symptoms if imprudence be committed. Unless a very small portion of the neck of the womb has been slightly touched with potassa fusa c. calce, I keep the patient in bed, or on the sofa, for a week after the application, even when there has been little or no aggravation of ordinary symptoms; because I have seen pelvi-peritonitis come on twelve days after the application of the potassa fusa c. calce, and after the patient had several times walked half a mile from her house to mine without any inconvenience. Another patient felt so little the application of this caustic to the neck of the womb, that, contrary to my advice, she took a walk on the following day, and this brought on pelvi-peritonitis, vomiting, and fever, which laid her up for ten days. I tell my patients to keep quiet, to remove the cotton-wool in a few hours, and I prescribe a full opiate at night. Linseed-tea injections, to which laudanum may be added, are all that is required until the wound is dressed on the seventh day after the operation; for it is useless to make an examination before that time, as no dressing of the wound is requisite until the eschar falls. If the potassa fusa c. calce has been applied to the cervical canal, or to the lips of the os uteri, it is necessary to make the patient clearly understand that she must return to have the womb dressed, in order to prevent the closing up of the womb. The occlusion of the os uteri and uterine stricture are easily prevented, by passing a wax bougie, or a paint-brush charged with a solution of nitrate of silver, through the os uteri into the cervical canal every fifth or sixth day for the following six weeks. On the falling off of the eschar, the subjacent surface would heal of itself, but it does so more speedily when thus dressed with a solution of nitrate of silver. Should the case require another application of the potassa c. calce, it is well to wait two or three months, if the patient be not pressed for time. I only remember to have once made two applications at seven days' interval, in the case of a lady sent to me from India with internal metritis, and an indolent hypertrophic swelling of the inferior lip of the womb about the size of a small hen's egg. I made an eschar about the size of a shilling; there was no pain or other inconvenience, and when I examined her, seven days afterward, the tumor was much softer and smaller, and as there was no inflammatory re-

action, I made a second application on the same spot; a little pain was the result, but the tumor was rapidly absorbed.

Dangers Attending the use of Potassa Caustica.—Unable to treat fully of these dangers, because I generally use other caustics, I attempted to do so by requesting others to fill up my imperfect sketch, but three editions of this work have elicited no such information. Simpson, explaining his preference for potassa fusa, and his mode of using it in the treatment of inflammatory induration of the neck of the womb, writes, that "Latterly he had abandoned other escharotics, and always used the common potassa fusa. He had found it far more manageable, speedy, and certain than any other method. He used it, of course, through the speculum, applying a stick of it freely, with a proper caustic-holder, to the ulcerated and indurated tissues. It required to be rubbed, or held *strongly* for a time, against the part which was to be destroyed. *In general a piece three-quarters of an inch or an inch long was melted down. The decomposition produced by it often caused a hissing sound.* If the induration is extensive, and the whole cannot be removed at once, increased action and absorption are set up in what remains. Absorption in this way is truly one of the results of inflammation, though still an undescribed termination. In some aggravated cases two or more applications are required, at intervals of eight or ten days. He had never seen pelvic cellulitis or any other bad results follow. The appearance after the operation is as if a portion had been clean cut out with a knife. A large quantity of vinegar and water is immediately thrown up through the speculum to neutralize the potassa, and prevent it from injuring the sound parts." Since this statement was first published, in 1847, in the Edinburgh *Monthly Journal of Medical Science*, it has been reprinted, in 1855, in Simpson's collected works, and without any comment from the editors, Dr. Priestley and Dr. Storer, so it must be believed that up to that time Simpson had never seen any bad result follow the application of an inch of potassa caustica to the neck of the womb, even when reapplied at eight or ten days' interval. In giving to so powerful a plan of treatment the sanction of his name, it is to be regretted that he did not put those who would be sure to imitate him more on their guard; for, though potassa caustica is a very useful agent, it is sure to be a dangerous weapon in the hands of inexperienced pupils and junior practitioners, and Dr. Mathews Duncan informs me that he has pretty certain knowledge of potassa caustica having caused the death of patients by pelvic abscesses and perforation of the peritoneum. Dr. Macrae, when practising in Calcutta, saw many cases exemplifying the injudicious use of potassa caustica by Simpson's pupils, who had rapidly passed from his class to the up-country stations in India. As even potassa fusa c. calce occasionally produces serious accidents, it is quite impossible to believe that an inch of potassa caustica can be applied to the neck of the womb without sometimes causing still

more formidable accidents. The risk of producing bridles will be greater, because the caustic has a greater tendency to run, and these bands of cicatricial tissue will be stronger. Dr. Bennet has stated that potassa caustica had been used wherever the vagina has been compromised, in the cases that have come to his knowledge. The chances of occlusion of the os uteri are greater, and I was not surprised to learn from Dr. Whitehead, that "in a number of cases wherein it was applied, both to the surface of the indurated labia and around their inner circle, the reduction of bulk, after healing, was attended by closure of the os uteri so complete, that it was necessary to reopen the orifice with a lancet, and use means to keep it open until the healing was complete. He has the record of several such cases, some of which have, however, been since fertile, without parturition having been attended with difficulty." It is obvious that, when it is a question of sudden destruction of a tissue, destruction may proceed too far, and the neck of the womb may be removed as well as its diseased tissues. This was the result of repeated applications of potassa caustica in one of my patients. The neck of the womb cannot be seen, nor can it be felt by the finger, and at the end of the vaginal cul-de-sac there is a minute opening, scarcely permitting the introduction of a filiform bougie. This constricted passage does not, in general, prevent menstruation being regular and painless, but it has prohibited conception, and I doubt whether parturition would be safely performed. Tyler Smith met with two similar cases, in which the lower part of the neck of the womb was destroyed by potassa caustica. Almost irremediable sterility must be expected in all cases similar to the three I have last mentioned, and should parturition ever take place, the worst consequences would ensue, and it will be seen that this agent was used in all the cases brought forward as instances of the injurious effects of caustic treatment.

Influence of Potassa Fusa c. Calce and of Potassa Caustica on Parturition when Applied for the Treatment of Uterine Diseases.—It has been asserted that the use of all strong caustics to the neck of the womb so interferes with parturition as to render it difficult, if not dangerous; and as every woman must be considered as *a possible* mother until menstruation has ceased, the inquiry into the truth of this assertion is of much importance. That certain caustics injudiciously applied to the neck of the womb should have a prejudicial effect on parturition, might be anticipated, from our knowledge that adhesive inflammation of the neck of the womb, and its occlusion, have been the results of very severe labors, of shoulder and other bad presentations, of the unskilful use of the forceps, or of adhesive inflammation setting up in the mouth of the womb before or after conception, and without known cause.

Evidence on this question should be chiefly derived from those who have been in the habit of using potassa fusa c. calce, and who have had

to confine women to whom they had previously applied it for the treatment of uterine disease. Those who have no experience of this mode of treatment, only know of its influence on parturition from some very rare, bad case about which they have been consulted, and being imperfectly acquainted with its antecedents they are liable to attribute to potassa fusa c. calce conditions which may have existed previous to its use. It is sometimes stated that potassa fusa c. calce interferes with parturition by the hard cicatrices by which its application to the neck of the womb is followed. Those who make the assertion cannot have applied potassa fusa c. calce, and watched the patient for a few months after its application, for on the falling of the eschar the wound gradually contracts, and heals without any hard cicatrix. The surface of the ulcer becomes coated by a mucous membrane, and some months afterward it is impossible to tell, either by touch or ocular demonstration, where the caustic has been applied. A slight indentation may, however, mark the spot where the caustic was applied; but I have never traced induration of the womb to the use of potassa fusa c. calce, nor have I seen it interfere with parturition by inducing rigidity of the neck of the womb. I have frequently applied fusa c. calce to an indurated womb, and pregnancy has become apparent before the induration was entirely removed. In those cases parturition was not unusually complicated; indeed, pregnancy is a wonderful solvent, as it softens the healthy cervix, so it acts on limited fibro-plastic deposits, and will often melt down a hard hypertrophied neck of the womb, so as to render parturition safe. I have confined several patients in whom the awkward use of potassa fusa c. calce had left bridles of cicatricial tissue, extending half an inch from the os uteri to the vagina; and I have seen these bridles soften and elongate, so as in no wise to interfere with parturition. I may have attended some hundred women whom I had cured of various forms of non-malignant uterine disease by potassa fusa c. calce, and in these cases parturition presented no difficulties which could be traced to the caustic. Dr. Bennet never once found this to be the case; and, in many of his patients whom I have attended for the last twenty years, I never met with one in whom so much of the neck of the womb had been destroyed as to compromise the safety of parturition. Gendrin's experience tallies with that of Dr. Bennet and my own; and Dr. Mayne and Dr. Protheroe Smith inform me that they have applied potassa fusa c. calce in many instances, and that in no case did it have a prejudicial effect on parturition. M. Bouchacourt, of Lyons, writes, that he finds the actual cautery more efficacious than the other caustics to reduce chronic inflammatory swellings of the womb; and that recently a patient, who had been thus treated, was confined in her forty-seventh year, without the slightest impediment to the dilatation of the neck of the womb. He adds, "I know of no facts proving that parturition had been made more difficult by previous application of caustics to the womb;

and that objection, if at all available, would rather hold good against the use of chloride of zinc and the actual cautery, than against potassa c. calce."

Chloride of Zinc.—When applied to the skin, this caustic gives very great pain, but I have not found it give more pain than potassa caustica when applied to the hard and enlarged cervix, with the intention of destroying a considerable portion of tissue. The chloride of zinc is made into sticks, that keep well a long time, and do not run like potassa fusa. When it is to be applied as an issue to the healthy uterine mucous membrane, it is well to freely rub the solid nitrate of silver to the spot two or three days previously, to soften the tissues and make them more amenable to the caustic. Before removing the speculum, the patient should be protected from the caustic by leaving on the cauterized surface a cake of cotton-wool soaked in a strong solution of bicarbonate of soda. A solution of this salt, forty grains to the ounce of distilled water, was Campbell de Morgan's favorite application to wounds, and it deserves trial in uterine surgery. Made into a paste, with wheaten-flour, it is the best caustic to destroy cancer of the breast. Maisonneuve's zinc-arrows are useful to remove malignant internal tumors that cannot be cut clean away with the knife; or if there be a fetid discharge from an open sore, with hemorrhage and pain, which is gradually wearing out the patient's strength, as in uterine and other cancers. When the tumor has more width than thickness, involves the integuments, is ulcerated upon its surface, and situated at the bottom of an old wound—if, in a word, it would not be possible to remove the disease without causing considerable loss of integument—then the caustic should be preferred. In patients who refuse to let the breast be extirpated by the knife, the use of caustic arrows is admissible, particularly when erysipelas, pyæmia, septicæmia, or puerperal fever are prevalent, even though the skin be sound and the tumor movable and capable of being removed by the scalpel, so as to leave a wound whose edges can be more or less approximated.

Actual Cautery.—Although I make very little use of the actual cautery in the treatment of uterine disease, this caustic is so much used in France, that a work on the treatment of uterine affections would be incomplete if it did not explain its action and value; but as the actual cautery requires the display of live coals, bellows, red-hot iron, and the smell of burning flesh, it reminds the public of mediæval tortures, peculiarly repulsive to the British mind. For ordinary cases requiring a strong caustic, the actual cautery is not more efficacious than potassa fusa c. calce, nor more destructive than potassa caustica, which can be applied without an assistant; whereas the actual cautery requires the presence of one or two assistants, and anæsthetics, that are not required when a potential cautery is applied. If one application of the actual cautery were sufficient, it might be a motive to recommend it, but it generally re-

quires to be repeated from four to six times, and the fact of its being easier to acquire the art of using mineral caustics than that of the actual cautery, is an additional motive for preferring the former. Such are the reasons which lead me to prefer the potential to the actual cautery, although this is the least painful of all the caustics. Indeed, the principal pain of the operation is said to be produced by the firm pressure of the rim of the speculum on the womb previous to the application of the cautery.

Two forms of cautery are used, a nummular one about the size of a shilling for flat surfaces, and one like the uterine sound, with an olive-like extremity. They must be heated to a white heat, or they would adhere to the cauterized surface, and could not be withdrawn without laceration, causing pain and loss of blood. The olive-like cautery is used to cauterize the cavity of the cervix, into which it should be passed and withdrawn as rapidly as possible, its deep cauterization being dangerous. The cauterization of the presenting portion of uterine tissues by the nummular cautery may be superficial or deep. The superficial cauterization is done by applying the instrument very gently. Deep cauterization requires the firm pressure of the heated cautery to the diseased womb; and, when it is voluminous, Jobert de Lamballe often made two or three cauterizations at the same sitting. Specula made of ivory, horn, china, or wood, have been recommended, but an ordinary round metal one will do, for it does not become sufficiently heated to injure the vagina. After the operation, a plentiful supply of cold water should be injected, and the patient must keep her bed. The slough is proportionate to the intensity of the heat and to the length of its application; it falls off about the tenth day, leaving a wound which seldom heals before the third week.

Range of Application.—The actual cautery is the very best caustic in cases of spongy softening of the neck of the womb, leading to considerable loss of blood, a form of disease in which other caustics can only act slowly. It is often applied to exuberant fungous ulcerations, whether they rest on soft or hard hypertrophied tissues. The actual cautery is also resorted to when considerable hypertrophy causes repeated relapses of uterine catarrh.

Dangers of Application.—The application of the actual cautery may be attended by all the accidents which occasionally follow the use of other strong caustics. It has caused death by lymphangitis, peritonitis, and pelvic abscess. The actual cautery should never be applied to the cervix if pregnancy be suspected. Dr. Lucas Champonnière opened the body of a pregnant woman who had been cauterized by Jobert de Lamballe: the cervix had been only slightly damaged, but the patient died of peritonitis. Another patient concealed the fact of her being three months with child from Dr. Broca, who cauterized her twice, but she soon aborted, and died five days after the second application. Pus was found in the uterine

lymphatics and in the peritoneum. Nevertheless, Laurès cites a case in which the application of caustic to the cervix of a pregnant woman did not bring on abortion.

The actual cautery has been applied, with success, to the pit of the stomach by Moscati; and a moxa, by other practitioners, to cure obstinate vomiting. Transcurrent cauterization of the skin has also been found beneficial in a host of nervous affections.

Electric Cautery.—Proposed by Dr. Middeldorpf, it has been praised by Becquerel, Dr. Ellis, and Dr. Routh, and more recently by Dr. Braxton Hicks, and it has been used to remove uterine polypi and small tumors from the external genitals, to destroy the mushroom-like epithelioma of the os uteri, and to disorganize the core of large fibroids. The electric battery is expensive, liable to get out of order, and to be found out of order just when the patient is fully under the influence of anæsthetics, so it is more suitable to hospital than to private practice. There are objections to the presence of smoke, when operating in the vicinity of the peritoneum. Nevertheless, as this cautery is gaining ground, I subjoin[1] Dr. Braxton Hicks' account of it. "He uses Middeldorpf's arrangement, composed of Grove's combination of four elements, each of not less than eight by six inches of platinum-sheet; or Bunsen's, with carbon-plates not less than fourteen inches by eight, with the zincs in due proportion. The full power of the above-named batteries is required only for the removal of the broad-based parts within the vagina, as, for instance, a broad-based fibroid; because, from the amount of fluids surrounding the wire-loop, a large amount of current is carried off by the tubes which hold the wire, which, as now made, are not perfectly insulated; also, because the length of the wire being great, the heating power is lessened thereby. For the lesser work, two cells, or even one cell, are sufficient. In no case should the wire be made white-hot; while, on the other hand, the operations with it should not be too long in progress, lest the heat affect the adjacent parts too severely, as is the case when the battery is of too low power. Perhaps it is better to employ three cells at first; and, should this not be powerful enough, the fourth can be added. I may further remark that, of course, the size of the wire influences the heating power of the battery; but the large wire is generally the best. An excellent plan is to coil two smaller wires into a rope, it being less liable to break than a single wire of the same weight, and is more flexible. The galvanic cautery, by the varied character of the form into which the platinum conducting wire is shaped, is a very different thing from either the old red-hot irons or the more recent gas-cautery. We can, moreover, imitate the red-hot iron by spirally coiling the wire round a porcelain cone, or on the flat base of porcelain cone, returning it

[1] British Medical Journal, November, 1874.

through the centre of the cone. The whole can be made of a white heat; the advantage of the cone being, that it retains a body of heat not so readily extinguished by the coolness of the tissues as is the wire alone, but it has the advantage over the red-hot iron in that its action is continuous. After a time, it becomes clogged with the inspissated and charred fluids, which can be scraped off easily. As is well known, in ordinary surgery the cones are adapted to the destruction of sessile growths (surface-burning) where the wire cannot be passed beneath so as to completely remove them. It is also adapted to such growths where the surface is very irregular, and the inequalities have to be carefully followed. By the loop we can imitate the scalpel, with this advantage over it, that no bleeding follows, at least generally; and, if there be a vessel not well closed, we can, by applying the cone to it, effectually control the loss. At the same time, it will also be perceived that there is no chance of plastic union. The surfaces thus treated must be healed by granulations. There is a great advantage in some cases in the searing of the surfaces. A shield is thus made against the ready absorption of unhealthy fluids; and in the case of cavernous structures, such as the penis and uterine tissue, this is very important. The *écraseur* to some extent effects the same closure of the vacuities as of the lymph-spaces, vessels, etc.; but where the growth is not pedunculated, there is a very great tendency in the surface to crumple up under the grip of the chain, wire, or rope, thus rendering the action imperfect; or, as in the case of a sessile malignant disease of the os uteri, where hard and soft are intermingled, the *écraseur* is pretty sure to glide off, scraping off, as it were, only the softer portions. The wire loop of the cautery is arranged so that it is screwed up like the *écraseur*, and, indeed, it should be used slightly in this manner at first, so as to indent the pedicles a little; and then, as the red-hot wire cuts through, the screw should be used in such manner that the two actions proceed *pari passu;* and thus there is made a remarkably precise division, as with a knife, without any tendency to crumple up."

Outside the body we can, however, very well dispense with the machinery of the loop, and, holding the wire between binding screws at the end of the conducting wire, draw it alternately from one side to the other. This is a more rapid method, and is adapted to batteries of low power. When the part to be removed has a canal passing through it, as the cervix uteri, the galvanic cautery may be better than the *écraseur*, because the latter tends very much to obliterate the canal by the severe compression which the tissues undergo; while the cautery acts very slightly so. Where narrow pedicles contain large vessels, as in pendulous tumors, the red-hot wire only is not sufficient. A simple line of searing fails to weld together, by the kind of fusion necessary in the process, the walls of the vessels. It requires a much more protracted action; and this can only be accom-

plished by employing the largest cones, acting upon half an inch of the pedicle. When this half-inch is fused into one mass, then the patient is safe from hemorrhage, seldom before. During this action, the peduncle should be held firmly constricted, either by a clamp or a ligature, so as to prevent any bleeding from interfering with the efficacy of this process of welding. The possibility of placing the needle, cone, or rope *in situ* before heating them, is the peculiarity of the galvanic cautery, and the advantage will be at once recognized by all. In small fistulæ we can insert the nævus-needle belonging to the apparatus; and, when carefully placed, it can be heated. This would be practically impossible with a simple red-hot wire. This is an advantage when we wish to cauterize the cervix or the centre of a fibroid.

Elastic Constriction.—Dr. Galabin,[1] taking a hint from Professor Esmarch, has placed an elastic constrictor on the cervix before cutting from it the flaps that are to be sewn to the stump. Dr. Galabin thus sums up the points in which it appears to him that amputation with the aid of the elastic constrictor compares favorably with the use of the galvanic cautery: 1. It requires no implements, except those which any practitioner has always at hand. 2. Although the operation itself takes somewhat longer, the patient, if the flaps unite, is saved from the necessity of protracted suppuration and cicatrization. 3. There is no danger of contraction or obliteration of the cervix being produced. 4. The operator is able to ascertain more precisely the exact extent to which amputation may with safety be carried.

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[1] The Lancet, February, 1877.

CHAPTER VIII.

EMMENAGOGUES.

To dash the pride of beauty by the sense of shame, the perfection of womanhood has been made to depend on a monthly blood-flow, that cripples activity for several days, even when unattended by pain or other morbid symptoms. The physiologist views parturition as the climax of female power, as the main object of a woman's existence; and possibly the habitual loss of a moderate quantity of blood may enable her to bear, with impunity, the very great blood loss that is almost desirable at delivery; it may also explain why her chances of longevity are greater than man's.

The menstrual flow is really the "*signum et præsidium sanitatis*," as the old writers have said; nevertheless, in treatises on therapeutics, there is no chapter so unsatisfactory as that relating to Emmenagogues. No medicines will, as certainly, cause menstruation, as purgatives will cause the bowels to act; and my estimate of these remedies may be inferred from the comparatively small space held by drugs in the following scheme.

- **Emmenagogues.**
  - **Indirect.**
    - Tonics ..... To increase the quantity of the blood.
      To improve the quality of the blood.
    - Bleeding ..... To quell inflammation.
      To draw blood to the lower half of the body.
    - Sedatives..... To quell pain and spasmodic action.
  - **Direct.**
    - Mechanical .... Puncture and dilatation of occluded passages.
    - Ovario-Uterine Stimulants.
      - Pelvic succussion and exercise.
      - Caloric.
      - Cutaneous stimulants.
      - Intestinal stimulants.
      - Mammary stimulants.
      - Vaginal stimulants.
      - Matrimonial stimulus.
      - Surgical treatment of the cervix.
      - Electricity and nervous shocks.
      - Drugs—Savine, ergot, cantharides, and aloes.

Before discussing these remedies, it is well to point out the counter-indications of emmenagogic treatment. Emmenagogues must not be thought of until the alteration of the voice, the enlargement of the breasts, and the whole appearance of the patient intimate that the system is ripe for a new function, and suffering from its not appearing. A good practitioner will not give emmenagogues, unless the system shows evidently that it can afford the loss of blood, and is suffering from its absence.

Menstruation is indeed a very valuable lesson to the therapeutist, for women are moderately bled every month, or some 400 times in the course of thirty years, without being more liable than men to the common run of diseases, or more easily prostrated by them; and yet practitioners of the present day are so hoodwinked by the bugbear, debility, that they fear to ruin a patient's constitution by taking away ten ounces of blood from a patient of average strength at the onset of acute inflammation.

It is often supposed that delicate health is caused by the absence or the irregularity of the menstrual flow; whereas both debility and the absence of menstruation really depend upon want of good food and of tonics, which may cure both. Change of habitation may check the menstrual flow for many months. This may alike occur to girls at school, to women travelling for pleasure, and to those confined to a prison, under which circumstances it is better not to interfere till the patient's health suffers from the suppression. There are women who have reached their full development without menstruating, and who have become regular soon after marriage; in many more, habitual connection has regularized menstruation, and made the flow more abundant. If there be symptoms of inflammation of the reproductive organs, antiphlogistics are the best emmenagogues. It may become advisable to examine the patient to understand the case, for it is very necessary to ascertain whether the hymen be imperforate, the vagina agglutinated, or the cervix without a canal, when, in the unmarried, in the absence of the flow, there is pelvic pain and great enlargement. When married women complain of amenorrhœa, an examination is advisable before prescribing emmenagogues, for the livid hue of the vagina, the softened cervix, and the central globular womb may show pregnancy, and even without these signs it is best, when there is a possibility of pregnancy, to avoid all active treatment, and to let time clear up the temporary obscurity of the diagnosis—an obscurity which may be great, even if the patient be married. Abdominal enlargement, caused by cysts, may also prevent the menstrual flow; and should the patient be about forty-five, one should always think of the change of life, and alleviate the symptoms by mild measures, avoiding any active treatment until it becomes imperative. I have more faith in emmenagogue medication than in drugs, and this medication should vary in accordance with the peculiarity of the case; my usual plan is to

inquire whether the proper time for the flow is still marked by premonitory pains, ovarian or uterine. If there be no premonitory signs, the patient may choose a convenient time and take a couple of aloe and myrrh pills every night, to produce moderate action of the bowels, in imitation of the process by which Nature often begins, or accompanies, the menstrual discharge; the legs should be placed in a pail of very hot water on getting up, and a warm hip-bath should be given at night, with or without the addition of mustard-flour; mustard-poultices may be applied to the inner part of the thighs and to the breasts on alternate nights, but they must not be left long enough to blister the skin; the breasts might be dry cupped, or rubbed with a stimulating liniment. On going to bed a linseed-meal poultice is also to be applied, as hot as possible, to the lower part of the abdomen, so as to cover the uterine and ovarian regions; and some warm drink should be taken by the patient. These measures should be repeated for three consecutive days, and are again to be tried, for three days, twenty-one days after the expiration of the first three days, and in the interval a chalybeate is to be taken, and a bit of piline is to be worn during the day on the lower part of the stomach, so as to well cover both ovarian regions, the piline being sprinkled with a teaspoonful of spirits of wine. I advise this being done every month for three or four consecutive months, and I have seen the plan bring back the menstrual flow that has been absent for one or two years; during which time the patients had been taking the best medicines under the best advice. This mode of treatment, by re-establishing menstruation, lately brought back to her right mind a young lady who had been in a very sad state of mental derangement for several years. Sometimes during the three days I give a mixture containing acetate of ammonia, chloric ether, and liquid extract of ergot, and, when the three days' treatment is unavailing, and head symptoms are distressing, six leeches may be applied to the cutaneous surface of the labia, the leeches being removed in ten minutes, after which a hot hip-bath is to be taken, or a hot poultice may be applied to the labia. Three or four leeches applied to the cervix have a still more decided effect. A few hints on the various causes of amenorrhœa will enable the practitioner to improve on this general scheme of emmenagogic treatment.

Food and a Generous Regimen.—These are obviously the best emmenagogues for anæmic, weak, and badly-grown young women, and for all those who do not menstruate, because they have previously lost too much blood, from whatever cause.

Tonics.—Just as the poison of small-pox often brings on menstruation, so mercury and the "ignotum quid" of malaria may check the coming on of the menstrual flow. Doubtless other blood-poisons bring on states resembling what we are so often called upon to treat as chlorosis, of which the absence or deficiency of the menstrual flow is an im-

portant sign. Chlorosis is a disease "*totius substantiæ;*" and Virchow has shown us that sometimes the heart and the arteries are in fault, as well as the blood. The sudden advent of chlorosis from causes that can only act on the nervous system, shows us that a bright and happy state of mind is conducive to cure. The influence of a morbid state of the sexual organs in the production of chlorosis, and the coincidence of its cure with the restoration of healthy menstruation, is a third therapeutical indication in this singular disease. Time, working with good influences, may improve deficient development in the heart and arteries, but we must not wonder that steel cannot do it, though it often cures other patients by incorporating itself with the blood-corpuscles. The steel and quinine, that we give with so much benefit, act also on the vaso-motor nerves, an impaired action of which is sometimes the first thing noticed in the history of a chlorotic patient. A young woman may be perfectly constituted so far as appearances may go, every want may be satisfied, the mind at ease, and the heart at peace, but if, at a given time, the system does not receive a sufficiently powerful stimulus from the ovaries, she visibly fades, loses strength, cannot menstruate, or does so imperfectly. Chlorosis, then, comes on gradually, but I have seen it come on quite suddenly in girls coming up to town for a much longed-for visit. Besides food, steel, and fortunate circumstances to cure the patient, we often want some means of increasing ovarian energy. Twenty years ago I asked whether it was not possible to do so by some kind of topical application to the ovarian regions, or by blistering them, or by acupuncture; but my practice is limited to the recommending the patient to always wear during the day a bit of piline large enough to cover the ovarian regions, and to sprinkle it with a teaspoonful of proof spirit. I have not given ergot or other emmenagogues to chlorotics, but, when better and stronger, have often told them to go in for the above-mentioned catamenial tridium. This seemed to me useful, certainly not prejudicial.

I could cite excellent authorities for recommending marriage in chlorosis, and cases of my own to justify the precept, but, on the whole, I agree with Dusourd,[1] that in the majority of cases it does more harm than good. An improved acquaintance with the pathology of chlorosis enables us to understand the bad effects of marriage on chlorotic women, for noting what occurred to sixty who were chlorotic, on marrying, Dusourd found that only seven were cured in one of the three following months, while twenty-seven remained in the same chlorotic state for the year after marriage. Twenty-six chlorotics became worse one or two months after marriage, and in nine of these the complaint from chronic, became acute. Neither should it be forgotten that the children of chlorotic women are always delicate, and sometimes scrofulous. For these weighty reasons,

[1] Traité de la Menstruation. Paris, 1845.

it would be wrong to put into a mother's head the idea that her daughter would be better for marriage. Should she, however, fall in love in a suitable manner, instead of opposing the match, I should do for the best and hope for the best.

Antiphlogistics.—These are evidently the best emmenagogues when ovarian or uterine congestion and inflammation prevent the menstrual flow, even when the patient's strength is scarcely above the average. More frequently, however, congestion or inflammation of the ovaries and womb cause an increased and too frequent flow. If there be plethora, antiphlogistics are still more useful, and in such cases, venesection often brought on menstruation.

Derivative Bleeding.—To promote the menstrual flow, bleeding from the saphena vein was formerly considered more efficacious than bleeding from the arm, because it was said to determine a stronger current of blood to the lower part of the body; and as the disuse of bleeding leaves us without experience, it would be better to follow the practice of those who knew more about it, and to bleed from the leg if we bleed at all. When leeches are used to bring on the menstrual flow, they set up a blood-current toward the uterine vessels, and sometimes cause blood to flow from the uterine surface. When they are applied every month to the labia, they induce a call for an habitual loss of blood from the pelvic vessels, which the womb may afterward let flow from its inner surface. Leeches applied to the cervix may likewise act as stimulants to the body of the womb, causing it to resume a forgotten function. I prefer the old fashion of applying them to the sensitive cutaneous surface of the labia, for it causes a stronger reflex action on the part of the uterus. In either case it is well to apply five or six leeches, to make them drop off when only half-gorged, and to stop the bleeding by touching the leech-bites with salt or alum, so as to cause menstruation by congesting the womb. Some recommend the removal of the leeches to be immediately followed by vaginal or rectal injections of hot water, which increases the flow from the leech-bites.

Antispasmodics and Sedatives.—Their utility is of course less marked than in dysmenorrhœa, but I have sometimes known a hesitating flow, with moderate pain, to be strengthened by opium suppositories given by the rectum, or by the vagina. Acetate of ammonia, with ether and other diffusible stimulants are always commendable.

Removal of Obstructions.—So long as ovaries are present, there may be a menstrual molimen, but there can be no menstrual flow without a fairly developed womb. Morgagni first drew attention to the fact that an infantile womb prevented menstruation in a full grown woman, and to Mr. Lawson Tait [1] is due the credit of having shown us that by the

[1] Obstetrical Journal of London, Nos. 2 and 3.

gradual distention of an infantile womb it not only increases in size, but may acquire the power to menstruate. In proportion as this was effected in his particular case, there was a gradual abatement of the epileptic fits to which the patient had long been subject. The dangers attending the opening of an imperforate hymen have been exaggerated, for there were only six deaths out of one hundred and thirty-nine cases collected by Peuch, of Montpellier. The vagina may have to be cut through for the exit of the menstrual flow, and for the same purpose it may be necessary to patiently tunnel through an obliterated cervix. I have published elsewhere a most remarkable case, in which this was so well done that the patient menstruated regularly, and had a child.

Uterine Surgery.—The fact of the menstrual flow being occasionally brought on by some kind of instrumental interference, and more particularly by the application of caustic to the ulcerated cervix, has led me, in a limited number of cases, to imitate one of the modes of bringing on premature confinement—to dilate the neck of the womb as an emmenagogue, even when the cervix freely admitted the uterine sound, a sponge-tent being inserted in the cervix when the menstrual flow was due. The pain that it caused, and the efforts made by the womb to rid itself of the foreign body, have been sufficient in the majority of cases to bring on the flow.

The fashionable stem-pessaries often bring on the menstrual flow, and twice I have known a painlessly borne globular box-pessary to bring back the menstrual flow. Boinet has repeatedly observed that swabbing of the vagina with tincture of iodine acted as an emmenagogue, and patients have long been told to inject into the vagina a pint of hot milk containing a dessert-spoonful of liquid ammonia.

Caloric.—Heat is the most widely diffused of all stimuli, and the supreme ruler of animated nature. Its influence on menstruation is shown by the appearance of the flow about two years earlier in Hindoo women than in the Danish ; by menstruation usually making its first appearance in summer in the temperate regions of the globe; and by its premature or too frequent occurrence in young women exposed to the unusually intense heat of kitchens and wash-houses, facts that I have dwelt on in my contributions to the physiology and diseases of menstruation. On the other hand, the utility of caloric applied to the lower half of the body in various ways to promote menstruation, is shown by the flow being usually checked by the sudden or permanent action of cold on the lower limbs. The checking of the perspiration, when the feet and legs come under the influence of damp cold, is the principal cause of checked menstruation, and the remaining with wet feet at monthly times is a frequent determining cause of chlorosis—a relation of cause to effect which is sometimes immediate. Hot pediluvia, hip-baths, and large linseed-meal poultices to the abdomen, are the usual modes of ap-

plying warmth, but some women prefer the dry heat of a hot salt- or bran-bag. Douching the sacrum and the inner part of the thighs with warm water has been found useful. Sitting over hot water is a household remedy; warm vaginal injections have succeeded, and warm ascending douches to the womb have also been praised. The habitual maintenance of abdominal warmth by flannel drawers should not be neglected, for this has often sufficed to regularize menstruation. I have known a few vapor or Turkish baths, accompanied by energetic rubbing and shampooing of the loins and lower limbs, bring back menstruation; and in a case where amenorrhœa was accompanied by paraplegia, both were cured, and the patient was able to walk, after having been helpless for two years.

It must be remembered, however, that bathing women live in the sea as it were, without being amenorrhœic and that a hot bath will stop the menstrual flow in some women, in whom it is made more abundant by putting the feet in cold water. Dr. Chapman says that the application of an ice-bag to the lower part of the spine is the best emmenagogue; it did not prove so in the three cases in which I tried it, and Dr. Rogers was not convinced by the trials he made of the ice-bags at the Samaritan Hospital for Diseases of Women. At all events the debilitating action of cold in weak patients should be carefully kept in mind.

Exercise and Pelvic Succussion.—Falls on the sacrum, blows on the abdomen, jumping, the jolting of a bad cart on a rough road, have often brought on menstruation before its time; quick walking and dancing have had the same effect, and riding on horseback is often an admirable means of inducing the regularity of menstruation. The same result may be obtained by a systematic course of gymnastics; and the administrators of the Paris hospitals have shown their wisdom in adding a gymnastic institution to their hospital for children, for the emmenagogue results of these exercises are mentioned by the physicians who attend this institution, and our large public and private schools would do well to remember the lesson.

Cutaneous Stimulants.—The warmth they determine, and their irritation of the nerves of the skin, have a reflex action on the womb. Mustard-flour is the household stimulant, usually added to the pediluvia and hip-baths. Liniments containing turpentine or other stimulants can be rubbed over the abdomen. Stimulating plasters, like the pitch-plaster, may possibly excite the ovaries to healthy action. The utility of these measures explains how amenorrhœa has been cured by dry cupping the inner part of the thighs for several days before the menstrual flow is due. While investigating the phenomena of menstruation, I found that habitual cutaneous eruptions of the pudenda accounted in a few cases for the too early appearance of menstruation, and for its too frequent occurrence.

Intestinal Stimulants.—The close relationship of the reproductive organs and the lower portions of the intestines, sufficiently explains why

spontaneous irritation and diarrhœa have been frequently known to precede the menstrual flow, and why purgatives often act as emmenagogues. It will have been noticed that purgation forms an important item in my catamenial tridium recommended to bring back the courses. Aloes is the purgative to be depended on, for it seems to have some specified action on the womb besides its purgative power, and podophyllin is also a suitable purgative. I have known mercury to stop the menstrual flow when the liver was in a healthy condition, but congestion of the liver and more or less biliousness often coincide with amenorrhœa, and help to render it persistent. In such cases an occasional three-grain dose of calomel or blue pill will be found very beneficial; and these remarks hold good in chlorosis and in the change of life. Cases are on record of the menstrual flow, after having been absent for years, becoming regular very soon after the removal of large quantities of intestinal worms.

Nerve Stimulants.—Many women cannot menstruate unless their nervous system be in a perfect state of repose. Unwelcome news, sudden emotion, the flurry of a party, the preparing for a journey, or the dread of the menses appearing, will bring them on in some women, or prevent their appearance in others. Electricity is more manageable, and the late Dr. Golding Bird found even static electricity very effectual, for if the patient's strength was sufficiently recruited, a few electric shocks, passed from the sacrum to the pubes, have been sufficient to bring on menstruation. Sometimes only one shock would suffice, the remedy being applied when the flow was due. He was in the habit of using a jar of the capacity of three pints. Since his valuable observations, inductive electricity has been extensively applied to medical purposes, and it may be useful in many ways as an emmenagogue. Duchenne and Raciborski, used to faradize the womb itself; but Dr. Althaus states the next most effectual way to bring on menstruation, is to apply one electrode to the lumbar spine and the other to the abdominal walls, above the pubes. He is, moreover, convinced that for whatever disease faradization is had recourse to, it frequently brings on the menstrual flow, even at uncalled-for times. On the other hand, Dr. F. W. Mackenzie insists on the necessity of applying the positive pole to the nape of the neck, and the negative to the cervix uteri, if we wish to act energetically on the contractile fibre-cells of the womb.

Ovario-uterine Stimulants.—Convent- and prison-life diminish or check the menstrual flow; sexual stimuli make it come sooner than it otherwise would in Hindoo girls, and, according to Dr. Rossignol, in very young Paris prostitutes. Marriage regularizes and strengthens the menstrual flow, unless the womb be inflamed. I have repeatedly known courtship to increase the flow, and to make it come too frequently and too abundantly. A patient with a very large fibrous womb, has repeatedly found that flooding followed a voluptuous dream. Four sisters,

three of whom I have attended, seldom have connection without its causing loss of blood from the womb, and the loss is very considerable when husband and wife come together after a prolonged absence. Two of these ladies have suffered slightly from inflammation of the cervix; a third severely, as well as from epileptic fits; but this loss of blood is a family peculiarity, independent of any organic disease of the womb.

This brings up the often-asked question, as to the propriety of marriage being contracted in the absence of the menstrual flow; but I reserve what I have to say on that score till I treat of the prevention of diseases of the womb. The stimulation of the breasts by dry cupping, by warm stimulating poultices and liniments, has helped to bring on menstruation, and the use of the breast-pump has also brought it on.

Emmenagogues.

The medicines commonly called emmenagogues are savine, cantharides, ergot of rye, aloes, saffron, muriate of ammonia, rue, and madder. The list might be increased by many others still less deserving of credit, the doubt which clouds their right appreciation being explained by the fact that menstruation is the most autocratic of human functions, coming on in the teeth of the greatest obstacles, or remaining absent in the midst of circumstances most favorable to its appearance. Another reason for our imperfect knowledge of emmenagogues is, that no judicious practitioner would give any of these drugs without associating it with agents of emmenagogue medication, which so often produce the desired effect without the use of drugs.

With regard to the action of these remedies, some, with Dr. Headland, restrict it to the determination of uterine contraction, as a result of strong intestinal contractions produced by purgatives. It must be remembered, however, that injudiciously large doses of savine have not only violently purged the patient, but caused great agitation, syncope, delirium, and high fever, which denote specific action of the drug on the nervous system. Cantharides and ergot act on the male organs of generation as well as on the female. I do not profess to know whether emmenagogues act primarily on the ovaries.

Aloes.—When one sees the large influence that fashion exercises over medicine, and that therapeutics have quicksands, which undermine and bury what seemed to be firmly established facts, it is a comfort to meet with drugs that survive systems, and have not yet been put aside by fashion. It is some satisfaction to read that Malampus cured one of the Argonauts of sterility by giving her the rust of his spear; that camphor was used in India as a nervine, before Alexander defeated Porus; that the actual cautery was held in the highest estimation by Hippocrates;

and that from time immemorial it has been an Indian practice to apply a solution of aloes to the os uteri to bring on menstruation, which is reported to have often succeeded, and never to have done harm. Aloes has long been supposed by the best practitioners to be an emmenagogue, and has formed part of a host of popular nostrums, Mother Welch's pills amongst others. It is the best purgative that can be used to solicit the return of menstruation, and the aloe and myrrh pills deserve their high reputation. Aloes has been given in enemata by Schonbein and Aran; thus given, it purges less, and has a stronger local effect. Aran gave seventy-five grains of the extract with fifteen grains of Castile soap, previously dissolved in three ounces of boiling water, as an enema, every other day, for a fortnight, after which he omitted the remedy, on account of tenesmus becoming unbearable. This tenesmus is doubtless the most important part of the treatment, and sets up a corresponding action in the womb. Aran was thus often able to cure long-standing amenorrhœa in seven or eight days. I have found it useful in a limited number of cases, but it is so painful, that I have not lately used aloes in this fashion, and I have heard nothing of the plan during the last ten years. I have repeatedly noticed that half-grain doses of podophyllin have brought on uterine pains and premature menstruation, and I recommend the association of podophyllin with aloes in pills, when this is the object.

Ergot of Rye.—That power of contracting the gravid womb which has so often been manifested for good or evil during parturition, renders probable the exertion of a similar influence over the unimpregnated uterus; and that, according as this contracting force is brought to bear on different conditions of the womb, ergot will stop menorrhagia, or cause the menses to flow; this hæmostatic power being the most reliable. Moreau and Guersant have cured paralysis of the bladder by ten to twenty grains of ergot in the course of the day, and in cases of paraplegia, it has been known to cause involuntary emissions of semen. From ten to fifteen grains of the powder may be taken two or three times a day, or the tincture may be administered, but I prefer the liquid extract.

Savine.—Therapeutists have exaggerated the ill effects of this drug so much, that the belief has got abroad that it is only given with a sinister intent; this is to be regretted, for savine seems to me the most reliable of a very uncertain set of remedies. Dr. Copeman, of Norwich, has published three cases, in which five, ten, and thirteen drops of the oil of savine were given in cases of amenorrhœa which had resisted other measures; none of the patients suffered from the drug, and it evidently brought on menstruation in two. I have given twenty drops, twice a day, without poisonous effects; but according to Dr. Loyer,[1] an overdose of savine has caused syncope, delirium, great agitation, and

[1] Paris Thesis, 1831.

high fever. Like other emmenagogues, it may fail without causing these symptoms, in the same way that cases are on record in which large doses failed to cause abortion. Aran admits that savine acts on the womb like ergot of rye; and as this has been often given for flooding, so has savine been successful in two cases of menorrhagia. It will be seen that I give the oil of savine in some suitable mixture.

Saffron.—This drug was so much in vogue in the seventeenth century, that it enters largely into Sydenham's laudanum; indeed, some have erroneously ascribed to saffron, and not to opium, the return of the menses brought about by the use of enemata containing laudanum. Saffron has been too much praised as an emmenagogue; it is a warm, pungent aromatic, like castoreum, vanilla, mugwort, and madder, which have all been praised as emmenagogues, and it may, like other stimulants, excite circulation, and thereby help the action of other measures judiciously resorted to at the menstrual epoch; but I am not at all convinced that the menstrual flow would follow the exhibition of these substances, even in large doses, without other means. The fact of saffron having been extensively used in cookery during the sixteenth century, particularly in Spain, is enough to show how slight must be its pretensions to be considered an emmenagogne. Saffron still forms part of the compound tincture of aloes, of the compound aloetic pills of the German pharmacopœia, of hiera picra pills, of the pills of Rufus, of the balsamic pills of Hoffman, which were formerly much in vogue, and of the elixir of Paracelsus.

Cantharides.—I may have been too fearful of the action of cantharides on the bladder, for I have seldom given them. They have, however, been administered in amenorrhœa by Hippocrates and Galen; and Dr. Mackintosh says he cannot speak too highly of them, giving ten drops of the saturated tincture three times a day, and gradually increasing the dose to thirty, forty, and even sixty drops. The evil effects of cantharides should be met by giving linseed-tea, camphor, and henbane.

Sulphuret of Carbon.—This is considered by Bouchardat to be a strong emmenagogue, so I do not like to omit its notice. Milne-Edwards and Vavaseur assert that a few drops sprinkled on the abdomen of a woman in labor will reawaken uterine contraction, even when ergot of rye has been ineffectual, and that by this means hysterical patients are promptly brought to their senses. It is very volatile, and may be given in an emulsion of almonds, but it has a very offensive smell.

Tonics.—Like other good tonics, when strychnia and arsenic are taken for a considerable time, they may regularize or bring back the menstrual flow by improving the whole system.

CHAPTER IX.

HÆMOSTATICS.

Women are taught to believe that the menstrual flow is never to be stopped, and they let themselves be brought very low before they draw attention to a too great loss. When they do complain, the chance is the doctor will be also afraid of checking the loss at once. He will seek to do so by inefficient doses of some good styptic, and so the flow often continues, more or less, for months, to an extent of which the medical adviser is often ignorant, and thus the health of women may be irretrievably lost. Many practitioners would be afraid of taking eight ounces of blood from the arm of a woman of average strength, but without concern they see her lose a gallon by the womb, so it is as well to state emphatically, that by whatever outlet too much blood is lost, the damage is the same. Even on the first day of the menstrual flow, it should be checked if it tells too strongly on a woman's strength. We are often unable to re-establish the menstrual flow, but we can always check it by large doses of ergot and digitalis, by ice, and by plugging the vagina. Before, however, discussing remedies, I will say a few words on the conditions of nursing that tend to check blood-loss, or to make it less fatal.

Hæmostatic Nursing.—I have known nursing and lifting of a heavy invalid cause loss of blood from women suffering from uterine ulceration, so it stands to reason that women should rest and lie down if blood-loss is to be restrained. If a patient be losing large quantities of blood from the vagina, she should be laid flat on a hard mattress, with light covering, and in a cool room. The importance of posture is so great, that it is no exaggeration to affirm that many lives have been lost from the friends not knowing, or forgetting, to place the head on a level with the body. It will be sometimes placed even lower with advantage, while the pelvis is so raised by cushions as to be the highest part of the body. This alone has been sufficient to check metrorrhagia. When the loss of blood has been alarming, its flow to the womb can be diminished by the application of strong ligatures to the four limbs, as near the trunk as possible, part of the blood being thus put by for future use; indeed I have seen some women die several hours after puerperal hemorrhage had been stopped, too little blood having been left to stimulate the brain and nervous sys-

tem, so as to enable them to ensure the performance of respiration and circulation.

A firm, wiry pulse will show that bleeding may be permitted to proceed; a soft, broad, and very compressible pulse, or one that feels like a fluttering thread, implies, on the contrary, that no time should be lost in checking the hemorrhage by additional means, such as the application of cloths, steeped in iced vinegar and water, to the vulva and the inner part of the thighs. Nurses at least should all know, that in case the loss endangers life, they should put a lump of ice up the vagina, without waiting for the doctor's arrival.

The accoucheur does not leave the house until the child has been applied to the nipple of the new mother, which shows how strongly the uterine vessels contract from mammary sympathy; and this may be imitated by applying mustard-poultices to the breasts. Hot maniluvia, with or without the addition of mustard, will be sometimes sufficient to check menorrhagia, and mustard-poultices and stimulant embrocations to the limbs have been useful. Besides this urgent indication to restrain exorbitant blood-loss, its return is to be prevented by treatment during the intermenstrual periods. The patient's hygiene should be well looked after; all extremes of exercise and excitement should be avoided, particularly during the week preceding menstruation. Uterine congestion will be quelled by horizontal rest, and by acetate of lead injections. Hyperæsthesia will be abated by an opium vaginal suppository at night, and gentle purgatives will quiet the circulation. Sedatives are often very beneficial—the bromide of potassium or of ammonium have been known to check the tendency to menorrhagia, so has henbane. I do not give mercury in these conditions, but it is credibly stated that small doses of bichloride of mercury have checked menorrhagia that had resisted the usual remedies, and without the occurrence of salivation, which has been, however, advised for this, as for other hemorrhages. When given during the inter-menstrual period, any good nerve tonic efficiently given, may become hæmostatic. Thus strychnia has been prescribed by Raciborsky, and arsenic by Dr. Handfield Jones, while I rely on sulphate of quinine. These measures will be often sufficient, but when menorrhagia cannot be checked, the practitioner becomes concerned to know whether it be essential, that is autocratic, or a symptom of pregnancy, or of disease, which can only be ascertained by an examination. There is no difficulty about this when the patient is a married woman, but when she is unmarried and young, it should be deferred as long as consistent with the safety of the patient, the more so, as in youth the blood-loss is less likely to be the result of organic diseases, and the system is more amenable to remedies. In many of these cases, damaging blood-loss may be checked without annoying the patients by an examination, provided remedies are fearlessly used. Half-drachm doses of the liquid extract of ergot and of

tincture of digitalis should be given three times a day. I have often done so on two successive days, without bad effects, and once I gave a drachm of each three times a day with good results. It will answer the same purpose, and be less repulsive to the patient, to give, three times a day, two of Homolle's granules of digitalis, with four grains of Bonjean's ergotin, made into pills.

In thus giving together these well-known remedies, I follow the lead of Dr. Crichton Browne, as illustrated by Dr. Myrtle,[1] of Harrogate. While giving these remedies, a two-grain opium suppository should be passed into the rectum once a day, even if there be no pelvic pain, for opium has often helped to quell blood-flow. If these remedies do not soon materially abate blood-loss, a lump of ice should be passed into the vagina; this is the simplest and most efficacious of hæmostatics, and the only one used by Récamier. When the recurrence of menorrhagia necessitates an examination, it may reveal a softish cervix and a globular enlargement of the womb, suggestive of impending abortion, or of uterine hydatids, when pregnancy is far advanced. Or the finger may detect fungoid ulceration of the womb, a polypus, a fibroid, or cancer. If none of these morbid conditions can be found, and menorrhagia becomes again alarming, the plan I have suggested should be better carried out, if this has been hesitatingly done on a previous occasion, and plugging the vagina is a last resource. If, on the other hand, the flow be less formidable at each successive period, it will show the treatment to have been judicious. It is well to bear in mind that determination of blood to the pelvic plexuses sets in a few days before the menstrual flow, so I have given small doses of ergot and digitalis three days before the flow was due, and I have sometimes thus controlled what had previously been exorbitant. We do not wait to check a horse till he is in full gallop. The precepts laid down are exemplified in the following case:

Some years ago I was consulted by a maiden lady, aged forty-two. She was very thin and careworn, and there was a slight impediment in her walk, and menorrhagia and a host of nervous symptoms seemed to have been brought on by some uterine affection. She was delicate as a child, never strong, but the monthly periods were habitually regular. When about thirty-six, she caught diphtheria, which had been some time in the neighboring village. She had the complaint in its most aggravated form, and she could only talk in a whisper for more than a year. When recovering, she was prematurely sent to the sea-side, and was again laid up for four months. Strychnia, galvanism, and hot sea-water baths comparatively restored her to health, but she continued to feel, as it were, "tight strings from the knees to the heels," particularly before and after menstrual periods, only separated by the interval of a week; and she fell

[1] Medical Press and Circular, June, 1875.

on her back if she attempted to cross a room without support. When about thirty-eight, her health was better, there was a fortnight between the periods, and the flow was moderate, but, nevertheless, there came on a muco-purulent vaginal discharge, which had an unusually weakening effect on her. Then followed blinding headaches, or fixed pain at the nape of the neck or in the lumbar regions, a pain which emptied the limbs of all power; and, what was worse, an exorbitant loss at menstrual periods. As the loss occurred at a natural time, the family took no alarm, while the medical attendant thought it might depend on the change of life, and gave tonics. The patient getting worse, she was placed under my care; I have described the principal nervous symptoms from which she was still suffering, but fortunately sleep was tolerable, and digestion fair. There was also extensive follicular inflammation of the labia, vaginitis, and the cervix was unusually large for an unmarried woman, very painful, but not ulcerated. I applied a solution of nitrate of silver to the cervix and to the vagina, ordered injections, with a solution of sugar of lead, an ointment containing the nitrate of bismuth for the labia, and thirty grains of bromide of potassium a day. On the coming on of menstruation, an opium and belladonna suppository took away the intense lumbar pain as by magic, but the flow was just as abundant, although the patient took fifteen minims of dilute sulphuric acid and of tincture of digitalis, with five grains of alum, four times a day. When the period ended, she took quinine and iron instead of the bromide, and the rest of the treatment was continued, the nitrate of silver being applied once a week. At the following period, a drachm of digitalis was taken twice a day for two days, and four two-grain opium suppositories were given by the bowel. Cold water was applied to the pudenda every hour, nevertheless the flow was reported to have been undiminished. The next time I gave half-drachm doses of tincture of digitalis and of the liquid extract of ergot, three times a day, for two days, and twice neuralgia required two grains of opium. This lessened the flow, but it lasted its usual eight days; so the next time, in addition to the above, a lump of ice was passed up the vagina with evident good effect. Vaginitis being nearly cured, the labial distress susceptible of being fairly kept quiet by the ointment, neuralgia being much better, the patient returned home, with orders to take the syrup of citrate of quinine and iron, and strychnine, twice a day, and at night fifteen grains of bromide of potassium, with five grains of chloral. Alum and zinc injections were to be used once a day. For cerebral neuralgia she was to apply to the nape of the neck a hot linseed-meal poultice, eight inches by four, and, on removing this, to put on the hot skin a bit of therapeutic lint, sprinkled with thirty drops of my solution of atropia and morphia. The patient was also told to sponge every morning, alternately with hot and cold water, and afterward to have the whole of the spinal column well rubbed for five

minutes. This treatment was fairly carried out for the following six months, and successfully prevented the too great flow of blood, which enables her to gradually gain strength. Some time afterward she married, and this was followed by the gradual recovery of perfect health; all signs of diphtherial paralysis have disappeared, the menstrual flow is regular as well as moderate, the patient is very busy all day, and able to walk four miles without being over-tired.

When this lady left town, I was still afraid that menorrhagia might have been only checked, and that it might ultimately have rendered it necessary to dilate the cervix, and to ascertain by the finger whether the blood-loss was not caused by a polypus, a fibroid, or internal metritis, in order that the patient's life might not be unwarrantably sacrificed, as was that of another lady.

A lady was sent to me by Dr. Smith, of Weymouth, in 1860; she was twenty-eight, and was suffering from chronic uterine irritation, cervical congestion, inability to walk, menorrhagia, leucorrhœa, and at times there would come away from the womb, for two days, enough serous fluid to wet three diapers. I attended her off and on for a few years, doing her good by leeching the womb, by the use of nitrate of silver, and, for a year, hydropathy, practised at home, enabled her to walk two miles a day without inconvenience. In 1869 she had a terrific flooding, for which on examination I could find no adequate cause, and I heard nothing more of her till 1873, when her brother, a well-known surgeon, told me that she had lately died of loss of blood, and that on post-mortem examination, a polypus of moderate size was found hanging out of the womb. This sad case is doubly instructive, for in the first place there is no doubt that if, after the flooding in 1869, I had insisted on dilating the womb, a perfect cure might have followed the removal of the polypus. In the second place, the case shows we ought at least to warn such patients that they should be occasionally examined, for if this had been done, even a little before this lady's death, her life might have been saved.

Catamenial Fever.—This kind of menorrhagia deserves notice. There is often considerable disturbance of the circulation during menstruation, and sometimes it amounts to fever. I have treated of this long ago in another work,[1] and Dr. Bernutz[2] has since then quoted from Dr. Tarnier two cases in point. The following is a good illustration of this form of diseased menstruation.

Miss N. was a tall, spare lady of good constitution, aged thirty-two, when I saw her in 1862. Menstruation had been profuse for four years, when, six months before my seeing her, she nursed a friend who had fits and became insane. Soon after this, Miss N. had very severe pain in the

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[1] Ovarian and Uterine Inflammation, third edition, p. 96.

[2] Maladies des Femmes, vol. ii., p. 260.

right side of the head, with some kind of seizure, and loss of power of the left hand. She gradually quite recovered from these symptoms, but, menorrhagia setting in, she became more and more weak and nervous, notwithstanding good treatment; so I was consulted. I could only find a sensitive and congested womb, and I ordered three grains of sulphate of quinine at night, and lead and laudanum injections twice a day. At the next period there was no diminution in the amount of the flow; it was unattended by pain, but there was nausea on the first day, and the skin was very hot and moist during the whole time, the pulse varying from 100 to 105, dropping down to 60, when the flow subsided. I witnessed these symptoms at three successive periods, and, finding that large doses of dilute sulphuric acid and alum had no effect on the flow, I gave every two hours during the period a dessert-spoonful of a six ounce mixture, containing one grain of acetate of morphia, three drachms of tincture of digitalis, and half a drachm of diluted prussic acid. An opium and belladonna suppository was also given by the bowel every night. During inter-menstrual periods, a dusky uterine mucous membrane was occasionally swabbed with a solution of nitrate of silver, and four grains of sulphate of quinine were taken at night. This treatment succeeded, and when I saw the patient a year after, she was well; there was still a little fever at menstrual periods, but no sickness or flooding.

It must be remembered that chlorosis may be attended by the uterine overflow of such poor blood as the patient possesses. Trousseau had seen such cases, and Regnier found the womb healthy in a fatal case of this description. Trousseau was successful with tannin and steel. Ergot and digitalis are indicated, ice had better be avoided, but vaginal injections, with water at 120° F., should be tried.

Climacteric Flooding.—For an adequate consideration of this subject, I refer to my well-known work on the change of life. I shall merely say that flooding so often forms an important part of Nature's mode of resettling the health of woman on new lines, that it should not be interfered with unless the loss of blood is telling too much on a woman's strength.

Should the loss be protracted, and should it occur at other than at menstrual times, an examination ought to be made, for the loss will be often accounted for by cancer or by fibroids, or by cervical ulceration. It is amazing what mischief may accrue to patients from medical men neglecting to ascertain whether blood-loss, thought to be climacteric, is not due to organic disease. A year ago I attended a lady, aged fifty-two, who had been losing a moderate amount of blood for three years, with an occasional subsidence for several days. This had brought on anæmia, debility, palpitation, constant headache, and dizziness, but she was told the bleeding was not to be interfered with. I found ulceration of the inner cervix, and I stopped the drain by two applications of acid nitrate

of mercury. I gave the patient first, bromide of potash, then iron; she was comparatively well in a month, and has continued so ever since.

Important therapeutical indications are given by a knowledge of the seat and origin of the blood-loss.

Vaginal Flooding.—Catamenial flooding may be due to a diseased vaginal mucous membrane. A fatal case of this description occurred in the practice of the late Mr. Obré,[1] in a healthy girl of fourteen years of age, and I cannot avoid the conviction that life might have been saved by the full use of ergot and digitalis, with ice, or by the careful application of the liq. ferri subsulphatis. On post-mortem examination, "the uterus was of a natural size; its cavity was empty and unstained with blood, as were also the fallopian tubes. The os uteri was closed; and the vagina was filled with the sponge that had been introduced during life. It was saturated with blood, and many clots were in the passage. On removing the contents, there was presented a general softened state of the mucous lining; in some parts it was quite removed from the adjacent muscular coat, and this structure was pale and easily separable by the edge of the knife; ecchymosed spots of blood were seen under it in many parts. There was no appearance of vascular erosion or of injury from violence." In a similar case, Trousseau saved life by plugging the vagina.

Cervical Flooding.—Considerable dribbling away of blood may occur from a small ulceration that has nothing peculiar in its appearance. The ragged ulceration of soft hypertrophy may largely bleed. The actual cautery is the best remedy, then fuming nitric acid.

Intra-uterine Bleeding.—I have already said how to cure the initial bleeding of internal metritis, and the obstinate bleeding that sometimes bears witness to subacute ovaritis. Now I must give the indications of bleeding caused by other diseases of the lining membrane of the body of the womb, for thence must come the blood, if not from the cervix or the vagina.

Bleeding from Retention of Foreign Bodies.—The retention of a fragment of placenta, or of an ovum, is a well-known cause of bleeding. The retention of the exfoliated mucous membrane causes the great loss of blood in membranous dysmenorrhœa. Hæmatic and calcareous concretions and polypi may do the same. The first indication in all such cases is to dilate the cervix, so as to permit the womb to empty itself, and to close up its vessels. The cervix should be freely dilated as soon as the conviction is acquired that the womb contains a foreign body, and in membranous dysmenorrhœa the cervix should be dilated a week before the menstrual period.

Bleeding from Internal Metritis.—When this is damaging strength, and cannot be checked by medicine, the cervix should be largely

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[1] British Medical Journal, May 16, 1857.

dilated, to find out whether the bleeding depends on a hemorrhoidal condition of the mucous membrane that sometimes accompanies defective involution, or on its surface being roughened by those hypertrophied utricular glands that Récamier called "fongosités," or studded with small villous polypi. These various conditions of the womb might be attacked by iodine injections; but I believe the best plan is, even in cases of membranous dysmenorrhœa, to swab the whole diseased surface with fuming nitric acid.

Bleeding from Polypi.—When suspected to be the cause of flooding, the cervix must be dilated, then the finger will find out whether the polypus be sessile or pediculated; whether, being numerous and small, the polypi cannot be scraped away; and whether the morbid state of the mucous membrane does not render it advisable to swab it with fuming nitric acid, as first done by Dr. Kidd, of Dublin, in a remarkable case.

Bleeding from Fibroids.—Flooding is most to be feared in the interstitial and submucous varieties. Ergot given to cure the disease has often checked the flow. I prefer combining it with digitalis, and with alum-iron, or some other astringent preparation of the same drug. It has occurred to Dr. McClintock and M. Nélaton, that a free incision of the os internum might check the abundant hemorrhage which so frequently attends uterine fibrous tumors, and the operation has had the desired result in my hands, as well as in theirs. It seems that the division of the neck of the womb permits the fibres of the body of the uterus to contract firmly on the contained tumor, so as to compress the vessels and prevent loss of blood; and I have successfully adopted this plan in several cases. The benefit may not be a lasting one, but the operation is a move in the right direction, for it brings the tumor down lower and may enable the surgeon to detach it gradually, and thus prepare it for removal. When fibroids lead to dangerous flooding, Dr. Savage freely dilates the cervix, and then injects a solution of tincture of iodine, which, for a time, checks the flooding; this process he repeats on its recurrence. When this plan led to the diminution or disappearance of the tumors, it was preceded by great abdominal tenderness, which has also occurred when ovarian tumors have disappeared under the influence of iodine given internally in large doses. Dr. Athill says that when fibrous tumors are imbedded in the womb, the fuming nitric acid exercises a marked effect in controlling hemorrhage and in allaying pain. I have no experience of the plan, but I can understand its utility in some cases of submucous fibroids.

Flooding from Cancer.—If the case be of long standing, it may be well to scrape away from the cervix the outlying portion of diseased tissue before applying Ruspini's styptic, the liq. ferri subsulphatis, or the fuming nitric acid.

Bleeding from the Impregnated Womb.—A debilitating amount of blood may dribble away from a florid fungoid ulceration round the

mouth of the womb in a pregnant woman, and it can be checked by the application of the acid nitrate of mercury. If a healthy woman is attacked with hemorrhage in the early stages of her pregnancy, we are warranted in considering the hemorrhage the forerunner of abortion, and we must treat it accordingly, but without making an examination, which might prove an additional source of irritation. If, however, the treatment resorted to be only partially successful, or if, even on the first attack, there are decided antecedents of uterine disease in the history of the patient, a careful examination should be made. If no inflammatory lesions are discovered, we may state the doubts and uncertainties connected with blighted ova; but if, on the contrary, inflammatory lesions are recognized, they should at once be treated and removed. In the latter case we may hope that the hemorrhage merely proceeds from the inflamed or ulcerated mucous surface, and that the ovum and its attachments to the uterus have not suffered, and, if the hemorrhage has not been allowed to continue too long, the pregnancy is often saved by the cure of the local disease. It is worthy of remark that cases of this description, in which chronic inflammatory thickening and hypertrophy of the cervix complicate the abortion, are those in which the hemorrhage is the most severe, the most continuous, and the most intractable. The reason is, that the os uteri, thickened and hardened by disease, cannot so well open to allow the ovum to pass, so the latter is arrested, and the hemorrhage may thus continue until the womb can squeeze out the ovum through the half-open rigid os, or until it be removed by means of a speculum forceps. In severe flooding after abortion, I prefer the tincture of iodine to the iron styptics, and I inject half an ounce or so of the undiluted tincture. Irregular gushes of blood during the advanced stages of pregnancy point to uterine hydatids, or to placenta previa. Digitalis is then useful, ergot should be avoided, perfect rest enforced, and large doses of opium had best be given by the rectum.

Post-Partum Flooding.—Since my last edition, Dr. Barnes has proved that we can safely and effectually check post-partum flooding by injecting a solution of perchloride of iron into the womb. It may, however, be fairly urged against this, or any other strong preparation of iron, that it may leave in the womb, and in its sinuses, a tenacious refractory blood-clot to decompose and cause septicæmia, so it would be better to use tincture of iodine.

Prevention of Uterine Hemorrhage.—Uterine hemorrhage, like all others, leads to two indications—1st, to restore health, dilapidated by loss of blood, and for this I refer to the chapter on tonic treatment; 2d, to prevent a return of the flooding. This may depend on plethora, or on a cachectic state of the system, as in chlorosis, when a combination of steel with astringents becomes an obvious indication. It may be caused by a peculiar hemorrhagic tendency of the vessels, alike inde-

pendent of chlorosis and of plethora. Such cases often resist all treatment; but I have found opium in large doses to be most effectual. When flooding at the change of life depends upon plethora, I follow the example of Fothergill, Hufeland, and Lisfranc, and seek to prevent it by taking very small quantities of blood from the arm, on the non-appearance of the menstrual flow. Three or four ounces of blood taken in this way, at increasingly prolonged intervals, often prevents mischief; and it must be borne in mind, that at the dodging-time, or after cessation, centrifugal currents should not be encouraged by repeated stimulating pediluvia, hip-baths, mustard poultices, and similar applications to the lower extremities. Hemorrhage however, as often depends less upon plethora than on the perturbed action of the blood-vessels of well defined parts of the body, and although other measures may be indispensable, the return of many hemorrhages can only be prevented by a judicious use of sedatives. The bromides will, therefore, be found useful; and as, when the blood is directed with a strong impetus to the womb, it is a centre of morbid action requiring to be lulled, that it may no longer disturb the circulation, sedative injections or suppositories are wanted, until the nervous irritability of the reproductive apparatus abates. Saline purgatives and small doses of nitre are also indicated, and the regimen must be carefully regulated. It is best to advise bland and farinaceous food, fish two or three times a week, a diminution in the usual quantity of beer and wine, an occasional warm bath, moderate exercise, and the avoidance of hot rooms.

Medicinal Hæmostatics.

Bleeding.—The flow of blood from the womb should not be too soon arrested, if the persistence of the patient's strength shows that the bleeding is an effort of Nature to relieve the congestion of the pelvic blood-vessels, or to improve the crasis of the blood. Bleeding is fully justified by the same reasons, and may be well prescribed when the continuance of flooding does not modify that hard, jerking character of the pulse which indicates the hemorrhagic cachexia. The best practitioners of the last century found that, under these circumstances, moderate bleeding from the arm checked the flooding. Hufeland says it has occurred to him, more than once, to observe that bleeding the arm stopped the menstrual flow, and that it was brought on by taking blood from the leg. I have never taken more than eight to ten ounces of blood, neither have I repeated venesection. Scanzoni has checked flooding by the application of leeches to the cervix uteri. I have no experience of the practice, and I think it difficult of application, and less advantageous than other plans.

Cold.—Ice is the first thing to try—ice in every form: it is not only effectual, but clean and grateful to the patient, unless debility be great.

Ice pills to be swallowed; iced water to be frequently taken in small quantities; vaginal and rectal injections of iced water; a bladder of it placed on the abdomen; and I have known flooding to cease on letting a lump of ice melt in a patient's hand. But the most effectual way of using ice is to shape a bit like a finger, about two inches long, and, when its asperities have melted down, to introduce it into the vagina, a sheet or blanket, several times folded, being placed under the patient. Cullen deemed ice the most powerful of astringents, Récamier used no other remedy for menorrhagia; I have often known it to check blood-loss when nothing else would, and I earnestly recommend it in place of drenching patients for many days with nauseous and ineffectual medicines. Ice, thus internally applied, gives a very disagreeable sensation of aching and shivering, so it should not be had recourse to when the patient is very cold and weak. At one time it was Aran's routine practice, in ordinary cases of cervical inflammation, to plug the vagina with broken ice, and he never found it do harm. The congelation of the neck of the womb by the application of powdered ice and salt may be tried, when it is difficult to check the flooding of cancer. Employed in these various ways, ice acts as a sedative; but when hemorrhage is suddenly checked by sprinkling cold water on the abdomen or the vulva, the favorable result is due to reflex action, the blood-vessels being contracted by the vaso-motor nerves. Brierre de Boismont praises baths, the temperature of which is gradually lowered, but it is so difficult to give baths safely under such circumstances, that I have never tried the plan.

Heat.—Guided by theory, Dr. Chapman advocates the checking of menorrhagia by applying hot-water bags to the lumbar region. I have tried the plan in three cases, and in one the flooding stopped an hour after the application. Dr. Routh and Dr. Athill have found the plan successful, and Dr. Noel Guéneau de Mussy has published two cases in which it was speedily successful: in one, menorrhagia had lasted six months. A thick, well-made, hot linseed-meal poultice, frequently renewed, is all that is wanted to apply heat to the lumbar region, and this point of practice should be tried and settled, the more so, as various good observers have speedily and effectually checked post-partum flooding by vaginal injections of water at from 110° F. to 125° F. This plan is useless if the womb retains clots or fragments of placenta, and it is obviously suitable for patients in the last stages of depression, to whom ice would be fatal.

Sedatives.—The value of full doses of opium to check flooding where there is pain, is well recognized by the profession, one, two, or three grains of the extract being given, according to the case, until the pain be lulled, but I give it in every case, and when there is no pain. Opium quells the irritability of the whole system, gives sleep or quiet, and diminishes the tendency to irregular determination of the blood. Opium

is a valuable agent in all bleeding from the reproductive organs; for, when diseased, a slight operation, even a few leeches applied to the womb or to the labia, may set up a determination of blood to the womb. This is described by some patients as a distinctly felt forcing action, or as a rush of blood; the opium will also check diarrhœa, if it aggravates menorrhagia. I generally order a two-grain suppository to be put up the bowel, when it is time to check the flow, and I repeat the dose, on the second and on the third night, if the flow continues unabated, or to quell neuralgia. Some women cannot manage suppositories, then a solution of extract of opium, two grains to the ounce of distilled water, should be prescribed, to be injected by means of a one ounce india-rubber bottle. Opium does what can be done by sedatives, and I now seldom combine it with belladonna, the effects of which are peculiarly distressing to some patients.

Ergot.—Time only increases our faith in this wonderful remedy. By contracting involuntary muscle, it is said to diminish the calibre of the larger arteries, and to distort the smaller of them, so as to check bleeding. This explanation does very well to explain the hæmostatic action of ergot, but it does not explain its action as an emmenagogue. It is, however, sufficient for the practitioner to know that ergot has the power of correcting several morbid states of the womb, and that it is much more trustworthy as a hæmostatic than as an emmenagogue. Those who have highly commended ergot gave it in large doses. Thus, Bayle [1] has published seventy cases of post-partum menorrhagia in which he gave a scruple of the powder four times a day, and he cured sixty-seven out of seventy cases. In 1843, Arnal wrote in praise of it, as a means of curing "engorgement utérin." Scanzoni has confidence in it, and American practitioners now use it as I do, to reduce the size of a womb that has been long the seat of inflammation. There are various ways of giving ergot: Scanzoni sought to obtain its local action on the womb by giving it in enemata, while others have made suppositories, by incorporating cacao butter with the inspissated liquid extract of ergot. I give the liquid extract, half a drachm, with the same quantity of tincture of digitalis, three or four times a day for two days. Drachm doses of ergot have been given two or three times a day in the treatment of fibrous tumors, and no one need be afraid of giving this dose when the loss of blood is alarming. Ergot has been extensively used hypodermically in Germany and in America. The lower part of the abdomen is generally selected for the injections, sometimes the back of the great trochanter or the deltoid. White injects into the cervix uteri and into the tumor, if accessible, and with no bad results, but others have followed his example and own to the occasional occurrence of abscesses. Hildebrandt uses

[1] Bibliothèque Thérapeutique, vol. iii.

Wernich's formula for the watery extract of ergot, adding pure glycerine, one part to four of the solution, and he injects forty minims, containing a little over two grains of the extract, say ten to twelve grains of the crude ergot. Americans generally prefer Squibb's, who recommends to dissolve 200 grains of the extract of ergot in 250 minims of water by stirring, to filter, and make up to 330 minims by washing the residue on the filter with water. Each minim represents six grains of powdered ergot. Ten to twenty minims should be injected daily, or every two days.

Mr. Grose,[1] of Melksham, has witnessed to the surprising effects of ergot, hypodermically given in post-partum hemorrhage. He injects into the arm a solution of five grains of Bonjean's ergotine in glycerine and rose-water, and he has rarely met with a case requiring more than a second dose. He cites the case of a poor woman, who had been reduced to the most pitiable state of weakness and pallor by hemorrhage following abortion of twins, some three weeks before he saw her. She had taken all the recognized styptics, but the bleeding continued. One ergotine injection checked the flooding to such an extent, that next day she said, "only colored water had come from her." A second dose was then given, completely arresting the hemorrhage, and it did not return.

Mr. Grose has never tried his plan in menorrhagia, and it is well worth while doing so.

Digitalis.—This has been so much praised in various active hemorrhages, that it is not surprising that Dr. Dickinson and Mr. May have found it useful in menorrhagia. Dr. Dickinson's attention was called to the remedy, by its having been given for the relief of a cardiac affection in a patient who was also subject to menorrhagia, and in whom it entirely arrested the discharge. This led to its further use; and in every case of uterine hemorrhage, unconnected with organic disease, requiring the employment of active remedies, that was subsequently admitted into St. George's Hospital, foxglove was had recourse to as the sole treatment, and it invariably arrested the discharge. The time that elapsed before the hemorrhage subsided, varied with the dose in which the remedy was exhibited. When large doses were given, as an ounce to an ounce and a half of the infusion, the discharge never appeared after the second day; when smaller doses were used, it never continued beyond the fourth, and one or two drachms of the tincture have been given in the course of the day. In uterine hemorrhage connected with organic diseases, the remedy acted with less certainty; its exhibition was required for a longer time, and the effect was transient. I give half-drachm doses of the tincture, and of the liquid extract of ergot, but, as the mixture is nasty, two of Homolle's globules of digitaline, and a pill containing four grains of Bonjean's ergotine may be given instead, as stated at page 180.

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[1] The Lancet, September 1, 1877.

Veratria.—To check menorrhagia, I have seen Aran give veratria, half a grain divided into four pills, to be taken in twenty-four hours; its action is similar to that of digitalis, only still more powerful. I have only used it externally for neuralgia. Veratrum viride is praised by many American practitioners as a trustworthy arterial sedative; the tincture can be given in doses of from five to ten minims every three or four hours.

Tartar Emetic.—It would be wrong to give tartar emetic when the strength of the patient has been greatly reduced; but, in the first or second stages of flooding, I have sometimes stopped it gradually by nauseating doses; at others, suddenly, by giving enough to bring on vomiting, not that I think the example worthy of imitation. Ipecacuanha has been so much praised for various kinds of blood-loss, notably in post-partum hemorrhage and in dysentery, that it would be most likely useful in menorrhagia, and it might be combined with digitalis and ergot.

Acetate of Lead.—This can be given associated with opium, ipecacuanha, and digitalis, but, however valuable as an external agent, and safe to use as such, it is both uncertain and dangerous to give it internally, even with an excess of acetic acid. I am surprised good men still order this drug; a patient has lately had prescribed to her eight grains of acetate of lead a day to cure menorrhagia, but lead-colic came on on the third day.

Mineral Acids.—These are valuable agents when given, largely diluted, in mixtures, or in lemonade, according to the formulæ given at the end of this work. Nasty messes can be made by combining sulphuric acid with gallic or tannic acid, but I prefer to give these in pills. A better combination is the solution of alum in a weak solution of sulphuric acid; but one might just as well give water in severe cases of metrorrhagia.

Mineral Astringents.—I have just mentioned the internal use of alum, perhaps it would be really useful in larger doses. Cullen gave ten grains every half-hour; or from two to six grains of iron-alum may be given in some bitter infusion twice a day. Although I deprecate the giving of steel, when there is a tendency to flooding, still there are cases of cachectic hemorrhage in chlorotic women which require steel to keep the heart up to its work; for this, the sesquichloride of iron in sulphuric acid, largely diluted, is a good preparation.

Vegetable Astringents.—Red roses, oak-bark, oak-galls, kino, catechu, rhatany, logwood, tormentilla, matico—all owe their value to the tannin and gallic acid they contain, differently associated and flavored, so that one may be frequently substituted for the other. With regard to the constitutional effects of these astringents, it is supposed that gallic acid acts on the ganglionic nerves by contracting the involuntary muscles of the middle coat of the arteries and the walls of the capillaries, thereby diminishing their calibre and checking hemorrhage, just as they restrain mu-

cous secretions by constricting the capillaries. Some assert that tannic acid has a similar general action, and that it passes out into the secretions as gallic acid. Tannin thus given internally ought to be useful, for Dr. Handfield Jones mentions having completely cured relapsing corneitis of both eyes by giving thirty grains of tannin three times a day. At all events, gallic acid is the strongest vegetable astringent that is administered internally, although it will often be ineffectual when the loss of blood depends upon organic lesions. I give it in two- or three-grain pills, one to be taken two or three times a day. Tannin is more useful as a local application, dissolved in glycerine, or made up into vaginal suppositories, and I sometimes add one or two drachms of it to a pint of water as an injection. It has been made into sticks with gum and a small quantity of oil, and the stick has been introduced every week into the cervix and allowed to melt there, but the plan has not got itself adopted, and has given rise to serious accidents. On three occasions, Dr. N. Guéneau de Mussy has known the thrusting of powdered tannin into the cervix to be followed by alarming pelvic symptoms.

Turpentine.—If a drop of spirits of turpentine be applied to a cut finger, the bleeding stops, and nothing checks hæmatemesis so speedily as a little water, on which floats ten to fifteen drops of turpentine. I have used turpentine as a topical application, to check bleeding from various ulcerations of the cervix. J. Hunter thought highly of it taken internally in cases of active hemorrhage. Dr. Copland commends the practice; and it will be found that resinous substances enter largely into the composition of many of the medicines which have been praised as hæmostatics. A liquid sold as "Ruspini's Styptic," which contains substances analogous to turpentine, is one of the best agents to stop the bleeding from broken-down cancerous tissues. The compound tincture of benzoin is also useful. Turpentine, cubebs, and copaiba have been prescribed internally in menorrhagia, and the fact of their having been accused of causing amenorrhœa is in favor of their efficacy as hæmostatics. Judging from the effects I have observed, turpentine is a reliable remedy, to the value of which Dr. Wilks has borne testimony, and the purer and less offensive kind, now sold as fir-wood oil, will facilitate its exhibition. Dr. Fordyce Barker reports favorably of turpentine in the treatment of abortion, and states that, where given as an enema, it not only acts as an effective oxytocic, but also by its hæmostatic properties.

Cinnamon.—I should have been ashamed of mentioning this as a hæmostatic, if Pereira had not drawn attention to its use in uterine affections, on the faith of German authors; Drs. Tanner, Aran, and Gosselin, admit its utility in menorrhagia, and give from half an ounce to an ounce of the tincture, with five ounces of water.

Blisters.—Dr. Noel Guéneau de Mussy and Dr. M. McClintock agree with those gone before us, that large blisters to the abdomen, or to the

sacrum, check menorrhagia, but I have no other knowledge of their value, and I think them unsuitable in civil practice.

Electricity.—The interrupted current and faradization have checked metrorrhagia, by securing the firm contraction of the uterus.

Surgical Hæmostatics.

Of the well known procedures of hæmostatic surgery, I shall only say a few words on the several modes of plugging the womb, and on the relative value of styptics.

Plugging the Vagina.—This is a clumsy way to check metrorrhagia, and is much less resorted to, now we better know the morbid states of the womb that cause the blood-loss, and that we strive to cure the disease, instead of coping with its symptom. I have only plugged the vagina once in the last ten years, when, late at night, I found a patient flooding after considerable division of the cervix. I follow the old-fashioned way of introducing a silk handkerchief into the vagina, and I fill the handkerchief with balls of tow in the usual way, retaining the whole in place by a firmly applied T-bandage. A more scientific way is to plug the cervical canal. The os uteri being well brought in view by means of the speculum, and the womb being brought down and steadied by the uterine tenaculum, small pledgets of cotton-wool are successively introduced into the neck of the womb, so as to fill it as much as possible. As the muscular tissue of the neck of the womb soon yields, and as it may be necessary to plug it again, I leave the speculum and moderately plug the vagina. At the end of seven or eight hours the wadding is to be removed from between the valves of the speculum, so that the os uteri may be replugged if bleeding still goes on, after which I withdraw the speculum and apply the bandage. This has been objected to, for fear it should favor the passing of blood through the oviducts into the peritoneum; but no instance has been published, and none has occurred in my practice nor in that of Dr. Bennet. The uterine orifices of the fallopian tubes are surrounded by circular muscles that effectually antagonize uterine contraction, so that the wadding is expelled long before the blood can be forced through the oviducts; and in the very rare cases in which blood has regurgitated through the fallopian tubes into the peritoneum, there had been long-continued pressure of an over-distended womb. Instead of being distended and permeable, the oviducts are generally found obliterated in some portion of their length.

Surgical Styptics.—When a strong solution of perchloride of iron is used, it should be remembered that its free hydrochloric acid is very irritating to the vagina, and that carbonate of soda should be added to the styptic, so as to convert the free acid into a neutral salt. For this

purpose, the addition of four grains of crystallized carbonate of soda to one ounce of the liquor ferri perchloridi will generally suffice, and the hæmostatic properties of the perchloride are not diminished.

Valuable as the perchloride of iron has been found, I propose its being replaced by a similar preparation of the American pharmacopœia. The liquor ferri subsulphatis is quite as powerful a hæmostatic as the perchloride of iron, and, being but very feebly acid, is not nearly so painful an application; in fact, it causes scarcely any pain at all. Mr. Allingham has testified to the value of this agent in surgery of the rectum, and none other is used by American surgeons. Tincture of iodine is, however, the best styptic in many surgical diseases of the womb, for it is also powerful as an antiseptic. I have shown elsewhere,[1] how successful it has been found to prevent both post-partum flooding and puerperal fever. The frightful mortality attending childbirth in Cuba, in 1840, led Dr. Dupieris to inject into the womb half an ounce of tincture of iodine and four grains of iodide of potassium and an ounce of distilled water, immediately after the extraction of the placenta, in every case of labor. The practice was so successful, that it was followed by other Cuban practitioners. Tincture of iodine has been extensively used as a hæmostatic by Dr. Savage and Dr. Routh, in cases of fibroid tumors. Dr. Fordyce Barker has injected the undiluted tincture into the womb, for the flooding that follows abortion; and Dr. Emmet applies it to all cut surfaces, after operating on the womb.

Ovariotomy.—After all, it is the ovary that is answerable for menorrhagia, so it is not surprising that the successful removal of ovarian cysts should have suggested the removal of ovaries that are recklessly wasting a patient's blood. Prof. Hegar, of Freiburg, has performed ovariotomy twice to bring about the menopause, and thus to arrest hemorrhage from uterine fibroids. In each case the bleeding ceased entirely, and the fibroids appeared to diminish. One of Dr. Trenholme's operations was to arrest hemorrhage from an uterine fibroid, and in the end it proved successful. This operation should never be thought of, so long as there is any better plan of treatment to adopt; but I do not believe it to be more dangerous than some of the operations that have had for their object the enucleation of very large fibroids. Ovariotomy might lead to the shrivelling of the fibroid, for in one of Dr. Battey's cases, a year after the operation an ordinary-sized womb had become infantile.

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[1] On Pelvic Lymphangitis. Transactions of Obstetrical Society of London, vol. xvi.

CHAPTER X.

SPECIFICS.

In stimulants and sedatives we have *physiological* specifics, and power has also been given to certain substances to act specially, some on the nerves, some on the blood, and others on the muscular fibre; while some remedies only exert their operation on the womb, because it is made of muscular fibre, blood-vessels, and nerves. If we understand, by specifics, medicines able to cure certain diseases by a power that physiology cannot explain, the number of specifics will be found singularly limited. Similarly limited is the number of specific taints or constitutional diseases to which we can trace uterine disease. From the belief that constitutional syphilis can never be eradicated from the system, it was easy to jump at the unsound conclusion that it is the main cause of uterine disease. The knowledge of the deeply damaging influence of scrofula has led others to look on it as the chief cause of uterine disease, but this does not accord with my observations as a London physician. The late Dr. Rigby was not justified, by our present knowledge, in affirming "that inflammation of the cervix as truly shows a constitutional diathesis as the gouty toe, the rheumatic knee-joint, or the enlarged strumous gland;" for, although he so firmly believed in the constitutional origin of inflammatory affections of the cervix, he could not enlighten us respecting the precise nature of this constitutional taint, and the remedies he prescribed show that it was nothing more than that general debility which originates most diseases—a debility not requiring, like gout, to be treated by specific remedies, but by a combination of restorative and tonic measures, already discussed at considerable length. Constitutional debility, as evidenced by a life of continued ill health, a highly nervous temperament, and particularly an innate defective putting together of the reproductive organs, shown by menstruation having been, all through life, more or less morbid, is the chief cause of uterine inflammatory affections; and uterine inflammation very seldom stands in evident relation to any specific poison. In chronic cases of uterine disease I have frequently noted a tendency of *all* the mucous membranes to get out of order, and as the mucous membranes of each patient are, as it were, cut out of the same cloth, it is not surprising that, in the worst cases of chronic inflammation of the uterine mucous membrane, there should be a similar unhealthy tendency in the

throat, the nose, the stomach, and the colon; and Dr. Bernutz has even noted an ulcero-membranous state of the velum palati and the gums to coincide with a similar condition round the os uteri. The occurrence of similar lesions in similar tissues denotes one of those morbid conditions of the whole system which we call cachectic; we cannot always discover the nature of that morbid condition, and we can only refer it to some hidden cause of debility, and treat it by tonics.

When we can trace uterine disease to a constitutional taint, to tonics we add its specific remedy, and surgical treatment may require to be modified, suspended, or altogether omitted.

Thus, in the more doubtful forms of specific action, the herpetic, rheumatic, and false membranous affections of the womb, we cannot do much more than renovate the system by the best plan of restorative treatment that can be devised for each case. In the scrofulous diathesis, we can only add iodine to tonics; in syphilis, mercury alone, or combined with iodine and tonics. The constitutional treatment of cancer is reduced to a most lamentable simplicity, and while quacks trumpet forth their nostrums to the excusable credulity of suffering humanity, the conscientious physician knows that, so far as medicines are concerned, he can only advise tonics. Writers have recognized cancerous, syphilitic, scrofulous, gouty, rheumatic, herpetic, and pseudo-membranous forms of uterine inflammation. The first three are of practical importance, and deserve separate consideration; but the others may be dismissed with a passing comment.

Uterine Herpetism.—Notwithstanding the evident difficulty of identifying minute lesions at the bottom of a speculum, Simpson found the cervix to be the seat of vesicular, pustular, tubercular, and erythematic eruptions. He thought herpes uterinus might be the origin of the common variety of granular ulcer, and had noticed pustular eruptions resembling lichen prurigo, ecthyma, aphthæ, and acne, in the form of hard tubercles or pustules.

Dr. Noel Guéneau de Mussy[1] has published cases of uterine eczema and acne. I have figured in another work,[2] a case of herpes in which, after the bursting of the vesicles, their membranes remained as white concretions, which, on falling off, left an ulceration. I have also depicted psoriasis, as observed by Dr. Bernutz, on the cervix, in coincidence with psoriasis of the skin in a scrofulous subject, and the milky white patches on the cervix, though destroyed by the actual cautery, reappeared. I have also occasionally observed on the cervix an ulcero-membranous state, like the ulcero-membranous stomatitis of children, which has been seen by Dr. Bernutz to coincide with an ulcero-membranous condition of the velum

[1] Archives Générale de Médicine, October, 1861.

[2] On Uterine and Ovarian Inflammation, third edition.

palati and of the gums, and we agree in the belief that, however difficult to cure, it does not imply a cachectic condition of the system.

There is often a simple mode of explaining the coincidence of vaginitis with eczema. The acrid secretions of cutaneous eczema of the labia inflame their mucous membrane, and that of the vagina, just as an acrid vaginal discharge causes eczema of the nates, and the discharge of coryza eczema of the upper lip. It is well known that contagious fevers, and more particularly scarlatina, may congest the entire length of the sexual mucous membrane, causing untimely menstruation, cervical abrasions, and vaginitis. Vaginitis is occasionally sufficiently acute to lead to more or less complete adhesion of the walls of the vagina, so the practitioner should bear this in mind, and order cooling injections when likely to be useful. There is a kind of relapsing herpes that deserves notice, because although it originates in syphilis, it is made worse by mercury; for, in constitutions liable to skin-diseases, a soft chancre in woman, as in man, may be followed by the cropping up of a group of vesicles, each with its surrounding red circle, in the immediate vicinity of the healed-up sore. These vesicles break in a few days, and leave the mucous membrane of the "fourchette" or of the labia of a thinner texture and of a brighter pink color. This little eruption which lasts about five days, is attended by a good deal of itching, is apt to return about every two months, and is often a source of great mental annoyance to the patient, who fancies it to indicate a syphilitic taint, although this is not the case, and the soft chancre does nothing more than to call upon the genital organs to exhibit the hidden constitutional tendency to some cutaneous fœdation. Patients have often been poisoned with mercury for this distressing ailment, which only requires to be washed with a solution of nitrate of silver, eight to ten grains to the ounce of water. This should be done two or three times a day, for two days only, and when the skin is the seat of eruption the same quantity of lunar caustic should be incorporated with an ounce of prepared lard, and the ointment is to be gently rubbed in twice a day for a couple of days.

The mineral waters of Uriage[1] which contain chlorurated and sulphurated soda, seem to have a real curative effect on this distressingly pertinacious infirmity. Mr. Jonathan Hutchinson has stated his belief that cutaneous disease is sometimes due to reflex nervous irritation of some far off organic affection, and the view is borne out by the study of cutaneous disease as a complication of uterine disorders. It is through the medium of the nervous system that sexual emotion causes blushing, that climacteric and ovarian disturbance cause the heat and flushes of the change of life and of uterine affections. I have elsewhere[2] pointed out

[1] De L'Herpès Récidivant des Parties Genitales: Dr. Doyon. Victor Masson, Paris, 1868.

[2] Uterine and Ovarian Inflammation.

the many cutaneous diseases that spring out of menstruation. Simpson had under his care two cases of amenorrhœa, in both of which the face was thickly studded with acne rosacea. In one case the eruption had repeatedly diminished considerably whenever local uterine treatment restored the menstrual flow. The following case very much confirms the solidist view of the cutaneous complications of uterine disease. A well-made young lady, of twenty-six, with that white and pink complexion that goes with reddish hair, had a very delicate childhood, menstruation had always been very painful, and for years she had been more or less subject to uterine irritation and to acne rosacea. Everything that could be thought of, except surgical treatment of the womb, had been done by her uncle, a well-known practitioner. I found an acutely anteflexed womb, vaginitis, with abrasion of the os uteri, exquisite sensitiveness of the sexual organs, frequent pain in the left ovarian region and in the back, with inability of walking, and headache. There was an abundant crop of acne on both cheeks and chin. I attended this lady for about a year without doing her much good; while every fresh exacerbation of ovario-uterine disease, and every bad menstruation was distinctly marked by an aggravation of the cutaneous eruption. As the acne resisted my appliances, and the exhibition of Fowler's solution for two months, the patient consulted Dr. Tilbury Fox, whose judicious treatment was also unsuccessful. Later on, it was thought that the arsenic might be more effectual if she forebore taking wine, and she left it off while taking the arsenic for another two months, but all for no good, and the state of the face varied from better to worse, according as the internal complaint was better or worse. From what has been stated, it follows that the unknown causes of skin-diseases may have an analogous morbid effect upon all the mucous membranes. This influence is oftener to be guessed at than demonstrated; guessed at, for instance, if vaginitis resists approved remedies, and is met with in a patient affected with eczema or with eczematous antecedents. This is the practical bearing of the question, for, although Dr. G. de Mussy likens a pustulous eruption of the cervix to acne, he can suggest no better local treatment than that of ulceration of the cervix. In these recondite affections, tonics will first suggest themselves, but after a time iron loses its virtue, and alkaline and sulphurous medicines should be resorted to internally and in baths and injections. Cod-liver oil should be tried. Arsenic alone, or with iron. Hygiene should be minutely attended to, and cleanliness is best ensured by two hip-baths a day.

Rheumatism.—Dysmenorrhœa and uterine disease are doubtless often caused by rheumatic influences, by cold and damp; but they often impart no tangible character to the inflammatory lesions, and suggest no peculiar remedy, and if all complaints are to be called rheumatic that are caused, or aggravated, by cold or damp, rheumatism will include half those of internal pathology.

Gout.—Occasionally those who suffer much from gout, or rheumatic-gout, are much troubled with vaginitis, with or without pudendal eczema. There is nothing in the appearance of this vaginitis to differentiate it from any other, but, as it is very obstinate, and liable to relapse, it may be accepted as one of the ways in which gout may affect women before the change of life. That a strongly marked gouty diathesis may strangely modify chronic inflammation of the cervix, is shown by a very exceptional case recorded by Dr. E. Kennedy:

"Mrs. H. was assisted into my consulting-room in an apparently deplorable state. She was attenuated, bowed together with pain, wasted, and bloodless, from repeated uterine hemorrhages. The neck of the uterus was a mass of ulceration, with hardness of the base and texture of the organ. A tumor could be felt, offering a hard resistance over the pubes, and the organ appeared enlarged to four times its natural bulk. She suffered from occasional retention of urine, and the pain produced by walking, or the motion of a carriage, was agonizing. There was a copious fetid discharge, with excessive menstrual periods, passing into hemorrhage, which had reduced her to the lowest stage of debility. The countenance expressive of pain and bloodless, but not exhibiting the leaden or dirty discoloration so often observed in carcinoma. The size of the tumor also was beyond what one would expect in this. Her age was about forty, and she had had two children, the youngest twelve. She had been gradually becoming delicate, as she described it, for two years. She suffered from dyspepsia, constipation, occasional attacks of gout, chiefly in her wrists and fingers, but which had caused less inconvenience within the last two years. Her urine contained an abundance of uric acid and urates, but no albumen or excess of sugar, Her father died of gout, and her mother had suffered from it occasionally. She had sleepless nights, intense lumbar pains and pelvic distress, aggravated by the pressure of the enlarged uterus on the bladder. She was consigned to my care from the country as a case of malignant ulceration of the uterus in its advanced stage.

"My first impression was, I confess, rather confirmatory of this diagnosis. But, when I had thoroughly investigated the case, a gleam of hope shone upon it, and I clung to the much-increased size of the uterus, the analysis of the urine, the gouty diathesis, and her own and her family history, as offering her an escape. The ulcerated surface was cauterized freely and repeatedly with chloride of zinc, followed by nitrate of silver; repeated sloughs were thrown off. Her strength was maintained with nutritive food; a fair allowance of wine administered. The opiates, by which alone she had procured sleep, were desisted from, and hyoscyamus, colchicum, bark, iron, and Vichy water were relied upon. Her general health speedily improved, the ulcer contracted rapidly, and in the course of three months healed; the uterus, at the same time, dimin-

ishing in size, relieved her from distressing pressure on the bladder, and she returned to the country recovered, and able to walk and drive without inconvenience.

"The sequel of the case, however, bears a moral. She had scarcely been restored to what was to her, comparatively speaking, crude health, when the gout, which had throughout her uterine attack been nearly suppressed, or rather confined to the uterus, again threatened her, but with more determination than formerly. Not merely her fingers and wrists, her knees and her ankles and feet were successfully and severely attacked, assuming the mixed gouty rheumatic character; and when I last saw her, at an interval of some years, the fingers of both hands were fixed; she had chalk stones and contracted joints, her knees and ankles permanently enlarged and fixed—yet the uterine inflammation and ulcer never returned; the uterus had diminished to little more than twice its natural size, and she was totally free from uterine distress."

Scrofula.—Am I right in believing that the sanitary efforts of the last forty years have abated the frequency and the intensity of scrofula? Twenty years ago, I seldom met with scrofula among the City of London poor that applied for relief at the Farringdon General Dispensary; and, if I mistake not, the disease is still on the decline. I mention this, because Dr. E. Kennedy [1] has laid stress on the importance of scrofula as a cause of uterine disease, and on account of his having stated that scrofulous ulceration is not unfrequent in Dublin. I think it is admitted that tubercular matter is rarely found in the sexual organs of women, and in presenting to the Pathological Society a specimen of tubercular deposit on a hard basis in the fundus of the womb, with occlusion of the fallopian "ostia," Dr. W. Ogle mentioned that, during the previous ten years, only five instances had been met with in the dead-house at St. George's Hospital, in one of which the tubercular matter was exclusively found in the oviducts and in the ovaries. Puerperal fever has been followed by a deposit of tubercles in the womb; and the same has occurred in predisposed subjects after blennorrhagic catarrh of the womb. I have, of course, seen ulceration of the neck of the womb in scrofulous subjects, but I do not remember to have ever seen a scrofulous ulcer of the cervix, an ulcer in which broken-down tubercular matter could be detected. I have occasionally met with what Lisfranc has described as tubercular or scrofulous ulceration of the womb; but the microscope has shown that the matter assumed to be tubercular, consisted of epithelial cells and a fatty substance, resting on a hard irregular ulceration, in which epithelial and fibro-plastic cells were abundant. This form of ulceration would thus seem to be akin to those considered cancroid, similar to lupoid ulceration, and to what Huguier has described as "esthiomène" of the vulva.

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[1] Dublin Journal of Medical Science, December, 1873.

In lupus, the secretion being exposed to the air, crusts form, whereas, in the pseudo-tubercular ulceration of the womb, the secretion is continually moistened by mucus, and retains a curd-like appearance and consistency. These ulcers are fortunately very rare, for they are difficult to heal, and require the use of strong caustics. With regard to ulcers met with in scrofulous subjects, I have already said that they present nothing specific, and they do not require any modification of the usual surgical treatment. It would be well, however, to attempt to remove the constitutional taint, by combining the internal exhibition of preparations of iodine with judicious tonic treatment. Iodide of potassium, in a tonic mixture, will do well, but I prefer the iodide of iron given in a syrup, from thirty to sixty drops in a little water, thrice a day after meals.

Syphilis.—The ravages of syphilis do not require to be exaggerated, but it has been asserted that there is a great deal of syphilis in the common run of uterine inflammatory affections. The late Dr. Mackenzie[1] sought to prove this assertion by elaborate statistical accounts of every morbid symptom and lesion to be found in women suffering from syphilis, which is made to bear the blame of all that is found amiss. All that is true in this position is that the conditions in which syphilis arises, very frequently cause uterine inflammatory affections. Most syphilitic patients lead a life in which misery and debauchery alternate, and in which they make a point of doing all they can to check the menstrual flow, in itself the commonest cause of uterine diseases. Besides its special poisoning influence, syphilis induces a cachectic state of the tissues, which predisposes them to inflammation and ulceration, not in the least specific. Mercury and the exigencies of a prolonged treatment are powerful debilitating agencies acting in a similar way; and thus one can easily understand that syphilitic women more frequently than others suffer from uterine catarrh, and from ulceration of the os uteri, which are no more syphilitic than the soreness of the nostrils caused by coryza. In other words, most syphilitic affections of the womb have distinctive characters, and should not be confounded with the non-specific lesions which frequently coexist. There are, however, instances where the lesions have nothing specific in their appearance, yet the woman is shown to be infected, by the recurrence of abortion, and by the birth of syphilitic children. In treating of this subject, Mr. Langston Parker says, "that the symptoms of secondary syphilis, as they affect the uterus, consist chiefly in discharges from the os, enlargement of the neck, with redness and superficial ulceration affecting the neck externally, as well as the orifice and canal of the cervix. The symptoms are rarely met with singly; they are

[1] Effects of Syphilis on the Uterine Organs. Royal Medical and Chirurgical Transactions, 1854.

frequently all present; but two or more generally co-exist. It may be asked, Are these pathognomonic of the existence of syphilis in the system? Would it be safe to assert that such symptoms are syphilitic, apart from the existence of other and the more well-known manifestations of the disease? It may be answered that such conditions of the uterus are unfrequent, apart from either the present or antecedent symptoms of syphilis." I deny the scarcity of the uterine lesions above described, apart from syphilis, for Dr. West has established their frequency. When Mr. Langston Parker compared the rarity of uterine lesions in post-mortem examinations made at St. George's Hospital, and at the Marylebone Infirmary, with what he saw in women supposed to be syphilitic, he should have borne in mind that most of the lesions that he observed in the *living* would have also disappeared in the *dead*, and the reader has seen at p. 27 how very frequently Dr. Liebman found post-mortem evidence of disease of sexual organs in women dying of other diseases in the Trieste Hospital. Dr. Whitehead, whose opinion on syphilis deserves great consideration, states that "When the lower section of the uterus, in a state of hypertrophy, presents a dark red surface, somewhat variegated or mottled or measly, and especially if it appear tense and glistening, it may pretty confidently be asserted that the patient has a syphilitic taint," but I own that I should require this state of things to be coupled with some syphilitic antecedents, successive abortions, or concurrent evidence of syphilitic taint in the patient's throat or on her skin, before submitting her to mercurial treatment. On the other hand, I have known women bear syphilitic children, and in fact many who did not present the appearance described by Dr. Whitehead, and in whom I could only find an abundant muco-purulent discharge coming from a red, granular, cervical mucous membrane. All things considered, I do not believe syphilis to be answerable for a large amount of the uterine disease that is seen in London. My disbelief is based on the records of observations made in a large City dispensary, on extensive practice in the upper and middle classes of society, confirmed by the statements of Ricord and of the elder syphilographers. My conviction is strengthened by the fact of its being entertained by men like Drs. Bernutz and Goupil, who have lately studied the whole subject in the hospital, especially set apart in Paris, for the treatment of women who suffer from syphilitic diseases without being prostitutes. These observers have stated to me their belief that syphilitic diseases of the neck of the womb are rarely met with in ordinary practice, and that of all these diseases, the true Hunterian chancre, although rare, is the form most frequently found; and as, in nineteen cases out of twenty, chancre on the neck of the womb is accompanied by chancre on the external organs of generation, the diagnosis is singularly simplified. Secondary affections of the womb are much less frequently observed; I mean mucous tubercles, similar to those well known to appear on the

velum palati, roseola, and a papulo-squamous eruption similar to what appears on the skin. Tertiary symptoms are even still more uncommon on the neck of the womb. Alphonse Guérin gathers from the same field of observation that indurated chancre is seldom met with on the neck of the womb; that soft chancre is more frequently observed; and that mucous tubercles are the most common manifestation of syphilis in women. It is, however, well known that men have got soft chancre from women in whom no lesion could be detected, and who had an acrid vaginal discharge; and Mr. Morgan, of Dublin, has seen a soft sore follow the inoculation of such a discharge in the woman herself and in others. Hence it follows that, should the bearer of such a discharge present anything suspicious in her history, it is best to treat her as if she were positively syphilitic. Of course the patient's cure, without ulterior signs of syphilis, would not prove that she had been really suffering from it, if Drs. Oldham and Tanner are right in thinking that the long-continued exhibition of small doses of mercury cures chronic uterine disease. The question is a most anxious one; for while, on the one hand, mercury may be absolutely wanted to cure syphilis, on the other hand, the belief in the syphilitic nature of uterine affections commonly met with in practice, implies the difficulty of distinguishing the precise cases, and leads to mercury being given in all. It would indeed be a calamity if, when we have just escaped from the lamentable belief that it was good to give mercury in all obscure affections of the stomach, we should be led, by a false interpretation of facts, to admit the urgency of giving it in the majority of inflammatory affections of the womb.

General Treatment.—Well-marked ulceration of the neck of the womb can be speedily cured by surgical treatment, and is but slowly benefited by constitutional remedies; whereas, on the contrary, under mercurial influence, syphilitic sores often heal without local treatment. Mercurial treatment is called for, not only by chancre on the vagina or womb, which is of rare occurrence, but also by secondary symptoms; for no doubt the health of many women has been ruined from the belief that secondary symptoms are not transmissible. By marrying a man imperfectly cured of syphilis, women have been so infected as to present syphilitic eruptions, loss of hair, sore throat, and blighted progeny. When chancre, mucous tubercles, or vegetations on the neck of the womb lead to the belief in syphilis, the husband should be carefully examined, and the circumstances of the case explained to him, in order that he may place himself under treatment. It will be obvious to every medical man, that unless he wishes to be kicked out of the house, he had better merely tell the lady that her liver is gorged with bile, and that she cannot recover without a course of mercury. Of the several good preparations of mercury, the protoiodide seems to agree best with the stomach, one grain made into a pill, with one grain of extract of henbane, to be

taken morning and night. It is necessary that the gums should be decidedly touched, avoiding, as much as possible, severe stomatitis and abundant salivation; and I deem it advisable to continue the mercury till the disappearance of the specific symptoms, and for as long a period of time as they took to disappear. The efficacy of chlorate of potash to check salivation is now denied, but it is said to be effectually prevented by gargling with a solution of alum, four times a day, while mercury is being exhibited. Cases occur in which it is judicious to associate tonics and cod-liver oil with mercurials, or with arsenic, when the skin is affected. Twenty grains of iodide of potassium, given in a bitter infusion, every morning, is of great use in rupia, which often marks the passage from the second to the third stage of syphilis, and in gummata and other tertiary symptoms; but although they often disappear rapidly, under the influence of this valuable medicine, they are liable to return, unless it be associated with protoiodide of mercury, one grain to be taken every night, after which the various preparations of bark are often invaluable to recruit the system. Donovan's iodide of arsenic and mercury is to be thought of in long-standing cases of a suspicious character.

Local Treatment.—If chancres of the cervix are imprudently cauterized in their acute stage, they enlarge and give a fungous appearance to the neck of the womb, making it look like an irritated epithelioma. Cases of this description have been published as instances of chancre grafted on cancer, and amputation has been resorted to. Chancre can only be cauterized with advantage in its reparative stage, and then slightly with nitrate of silver. Cleanliness is of extreme importance; the patient should have a hip-bath every day, use emollient injections three times a day, introduce into the vagina lint or cotton-wool soaked in aromatic wine, or in a solution of five grains of carbolic acid in an ounce of distilled water, which will prevent the appearance of other chancres on the vagina, labia, and perinæum. The same scrupulous cleanliness is necessary in secondary symptoms; the mucous tubercles require to be touched with nitrate of silver, or brushed once a day with equal parts of water and carbolic acid; iodide of potassium is also usefully given in injections and gargles.

Cancer.—In cases of advanced cancer, it is sufficient to pass the finger over the cervix to know at once that the patient is doomed; but it is best not to give a decided opinion, and to say the case is serious and requires to be studied. If a patient is to be condemned, it is better that she should feel her condemnation has been passed after mature deliberation. It is often possible to spare the patient the knowledge that she is affected with cancer of the womb and to let her die in ignorance thereof, but it would be dishonorable not to inform her friends. It would be still worse to hold out hopes of ultimate recovery, though the result of such conduct

must be that the patient will soon seek other advice; for it is in human nature to hope against hope, and to submit to any torture rather than to admit the incurability of the disease. Medicine has discovered no such remedy for cancer as mercury for syphilis, or as iodine for scrofula. Twenty-five years ago, cancer was confounded with and was thought to originate in chronic inflammation of the womb, and one was justified in admitting the curative influence of leeches, extract of hemlock, and of similar sedatives; but this is no longer possible. In the course of thirty years' practice, I have only once witnessed the passage of the womb from inflammation to cancer. This was in the case of a lady, aged forty-four, who was suffering from soft hypertrophy of the womb, with extensive ulceration dipping into the cervix, and implicating the lining membrane of the body of the womb, for menorrhagia was frequent and abundant. The case exactly resembled others that I have been able to cure, and Dr. H. Bennet likewise thought it purely inflammatory. I attended the patient at irregular intervals for a year and then lost sight of her, till summoned five years afterward, when I found her dying of a large encephaloid cancer of the womb; a diagnosis concurred in by Dr. Barrett. The fact of the patient having had such extensive uterine mischief for at least ten years, when we know that cancer kills a patient in three years, confirms my belief that there was no cancer when I first attended her. The neglect of all treatment, overwhelming misery, and mental anxiety—that may be imagined, when I mention that her husband, believed to be dead, suddenly returned, to find his wife married to another man—may, to a certain extent, explain the passage from inflammation to cancer. At all events it is clear that the curing of uterine disease is the best preventive of cancer, which is rare among the unmarried who menstruate regularly. All we can do is to keep up the patient's strength by the most judicious combination of restorative and tonic measures. If steel agrees, let it be given in as large doses as the patient can bear, with the precaution of frequently changing one form for another, or of combining it with cod-liver oil. Were Hildebrandt right in believing that, in 50 per cent. of cases, cervical cancroid originates in papillar growths due to simple inflammation, this would explain why mercury has been said to cure cancer. A fair trial should be given to Donovan's solution of iodide of arsenic and mercury, each drachm containing one-eighth of a grain of protoxide of arsenic and one-fourth of a grain of protoxide of mercury. Half a drachm may be given twice a day in a china spoon. I have tried this remedy at the recommendation of Carmichael, and although it has done no good in uterine cancer, its exhibition was followed by marked improvement in cases of lupus. In the treatment of cancer of the uterus, both cancroid and carcinoma, Dr. Atlee has great faith in the use of arsenic internally, in small doses, long continued, combined with the local use of a rather weak solution of iodine in glycerine. A drachm of iodine and a drachm of

iodide of potassium are dissolved in two drachms of glycerine, and this is applied by a brush or cotton two or three times a week all over the cervix uteri, and to any part of the growth which can be seen. Mr. Spencer Wells relates having seen a case of undoubted carcinoma, where the patient and her husband, a medical man, fully confirmed all that Dr. Atlee said of the remarkable improvement which had followed this treatment in her case.

Who would treat cases of cancer without the aid of sedatives? Sedatives given as suppositories, injections, poultices, all find application; it is better to give chloroform to anæsthesia, than allow a patient to be driven to madness by an intolerable, irritating pruritus of the vagina, or by unbearable pain, and, better still, to make hypodermic injections of morphia. The application of ice to the neck of the womb is only a palliative. I have known congelation of the neck of the womb to be continued, twice a week, for a year, without checking the usual growth of the disease. In this case it prevented hemorrhage, and its application was painless, but I have been obliged to give up the remedy in other cases, owing to the pain it determined. Prolonged irrigation with cold water is not open to this objection; and, if it be so arranged as not to wet the patient, it is soothing, and takes away the offensiveness of the discharge, to prevent which, however, it is often necessary to have recourse to the solution of chlorinated lime, one ounce being added to each pint of fluid to be injected; but I prefer Condy's fluid, in the proportion of one teaspoonful to a pint of liquid. To this it is necessary to add a drachm of laudanum, and sometimes a tablespoonful of glycerine, without which these agents frequently cause irritation. A very weak solution of carbolic acid is a good disinfectant. A teaspoonful of laudanum and glycerine may be added to any other cooling injection, such as linseed-tea, a saturated solution of borax, of chlorate of potash, or acetate of lead, alum, and tannin, in the proportion of one drachm to the pint. I have not noticed that the injection of carbonic acid into the vagina was followed by results sufficiently good to compensate for the trouble it gives. All these remedies will be occasionally found useful in promoting the healing of the ulcerated surface, and in restraining the abundance of the discharge, which is both weakening and offensive.

All hæmostatics are more or less available, and may require frequent application. The bleeding surface may be painted with a strong solution of alum and zinc, with tannin or nitrate of silver, each dissolved in its weight of water, or with the liq. ferri subsulphatis. Ruspini's styptic, in which a pledget of cotton-wool is to be soaked and well fixed to the ulcerated surface by means of the speculum, was the preparation that Sir B. Brodie most relied on. A good way is to inject a strong solution of the liq. ferri subsulphatis by a little glass syringe, and to leave the ulcerated cancer to soak in it for a few minutes, then to suck it up, and

leave, close to the sore, some cotton-wool soaked in the styptic, with a string tied round it, by which the patient is to be told to remove it in a few hours. This may be repeated about once a week; it does good in the worst cases, and may effect a cure when the disease is superficial and epithelial. Care must be taken not to let the *perchloride* of iron flow over the vulva, unless the free acid it contains has been saturated by the addition of carbonate of soda; trouble that may be saved by using the liquor ferri subsulphatis.

When no other operation is justifiable or permitted, it may be advisable to diminish the amount of disintegrating cancerous tissue, by occasionally removing all that can be scraped away of softened medullary tissue, without causing too much pain or blood-loss. The cancerous discharge is lessened, and some think that the virulence of the cachexia is thereby abated. Professor Stoltz has done this for more than thirty years with the uterine curette. Professor Simon revived the practice, and it has been advocated by Simpson,[1] on the ground that it relieves pain, checks blood-loss, and the discharges that lead to the infection of conterminous sound tissue. Dr. Wynne Williams thinks highly of applying to the denuded surface of medullary cancer, a solution of twelve drops of tincture of bromine in a drachm of proof spirits of wine. According to Dr. Routh, the healing of a raw cancerous surface will be greatly expedited by dressing the wound with gastric juice. Dr. Liebman[2] has shown that cancer spreads faster and higher in the lining membrane of the cervix than in its substance, and he holds with Spiegelberg, that amputation of the cervix is useless except in cases of pedunculated epithelioma. I take the view generally adopted, and I think it gives the patient the best chance to remove the diseased tissues, whether pedunculated or not, at an early date. Formerly the chain ecraseur was much used to amputate the epitheliomatous cervix, but the unintelligent instrument leaves portions of diseased tissue, which have to be cut away or destroyed by caustic, so it is a question whether it be not better to cut the diseased parts clean out with the knife. When it is difficult to do so, and when there is an abundant fetid discharge, Maisonneuve's zinc-arrows, made of chloride of zinc, may be embedded in the cancerous mass, so that they may eliminate a portion of it. Dr. Barnes, in praise of the galvanic cautery, says: "There is rarely any serious bleeding, sometimes almost none; now and then, if a small artery spouted, the use of the porcelain cautery of the battery had effectually stopped it. In those cases in which the disorder did not form a projecting mass, the button galvanic cautery could be moved over the surface, destroying the necrosed portion. Comparatively healthy granulations commonly followed, and there was almost

[1] British Medical Journal, October, 1872.

[2] Transactions of the Obstetrical Society of London, vol. xvi.

always freedom from hemorrhage for a time, and the general condition greatly improved. He had only known one casualty from the proceeding: a woman in St. Thomas's Hospital died a few days after the operation from peritonitis. In all the other cases, reprieve and benefit were experienced. In one case the subject had two pregnancies, and she was alive five years after the operation, although the disease returned."

Extirpation of the entire womb, even if no organ be affected by the cancerous diathesis, is too dangerous a remedy to be recommended, for only two survived out of nineteen patients who were operated on. Récamier's patient lived twelve years after the operation—Was it cancer? The fragility of the uterine tissues, the breaking down of the conterminous peritoneal adhesions, which render peritonitis, cellulitis, and hemorrhage almost inevitable, are sufficient to deter the surgeon from the performance of this operation, which can only be done with hope of favorable result in cases of extreme procidentia, when the womb has long lost its right of pelvic citizenship.

The normally placed womb has nevertheless been successfully removed by Dr. Blundell, and the patient lived a year; ultimately dying of a recurrence of the cancer. Another cancerous womb was removed by Dr. Hennig, of Leipsig, and the cure had stood its ground eight months, when he gave the particulars of the case, at the forty-ninth Naturforscherversammlung, recently held at Hamburg.

"In the performance of the operation, the uterus was first separated from its connections with the anterior wall of the vagina by a knife and scissors; next it was separated, by the fingers, from the anterior fold of the peritoneum; and then, since the vessels in the broad ligament bled but little, the fundus of the uterus was drawn forward, first with two fingers, and afterward with a hook, so that its connections with the posterior wall of the vagina were divided without difficulty. The growth had invaded the posterior vaginal wall, and one tubercle involved the wall of the rectum, and by its removal a small opening was made in the rectum. The total length of the uterus was five and one-half inches, and the carcinoma had invaded the whole cervix. It was found that the left ovary and fallopian tube, adherent to the uterus, had been removed with it, and about one-half of the right fallopian tube. Thus the uterus had not been separated from the peritoneum as intended, but the tissue which was attached to the base of the uterus showed that old peritoneal exudations had filled up and enclosed the pelvic portion of the peritoneal cavity, in consequence, no doubt, of perimetritis. The opening in the rectum was closed with the needle, and a piece of ice put into the wound; there was little subsequent hemorrhage, and the wound was cleansed afterward by injections with a solution of salicylic acid. Considerable peritonitis followed, the temperature of 105° being reached on the fifth day after the operation, but it gradually subsided. The recto-vaginal

fistula was closed by an operation four weeks after the excision of the uterus, and, with the exception of a small superficial abscess from some enlarged glands, the patient's progress was most satisfactory. Four months later, a small, soft growth appeared in the neighborhood of the fistula, and was removed without difficulty, the fistula having become almost closed; and up to the date of the communication, no further symptoms of recurrence had manifested themselves, and the patient's health continued good."

CHAPTER XI.

UTERINE MISPLACEMENTS.

It is the fate of every important doctrine to be turned into a paradox by some crotchety man of talent; and, by a natural process of reaction, one startling paradox soon evokes another of an opposite tendency. These medical paradoxes may, however, serve a purpose, for they are the buoys that mark the rocks of a dangerous channel, and enable sensible men to keep the golden medium line of safety in theory and in practice. The subject matter of this chapter has been so recently reclaimed, that great diversity of opinion might have been expected, and the ridiculous importance attached to the womb's deviating slightly from its usual position so irritated Cruveilhier, that he declared the womb to be always on the move, and without a determined position. In like manner, pathologists were led to affirm that uterine displacements had no proper symptoms, because it was becoming the fashion to attribute all the sufferings of women to some moderate displacement or flexure of the womb. While Lisfranc was lecturing at La Pitié, and ascribing all uterine diseases to congestion and inflammation, at La Charité, Velpeau was attributing them to the malformations and to displacements which he was, in a measure, discovering and naming. From the first these displacements tempted the ingenuity of practitioners to correct them by forcible means, and, in 1827, Amussat had invented an intra-uterine stem-pessary, but, although it was provided with a flexible stem, and great precautions were taken, acute peritonitis followed rapidly. Without having any knowledge of Amussat's attempt, it also occurred to Velpeau to keep the womb in its right position by an intra-uterine stem-pessary. Whatever theory was adopted, all practitioners kept their patients on the back for a year if the womb were anteverted, and on the belly if it were retroverted; and there are men still living amongst us who once entertained the notion that they could permanently restore the womb to a right position if they replaced it, by means of the uterine sound, every day for two or three months. The absurdity of this plan led Simpson to devise his intra-uterine pessary, which he advocated in the same enthusiastic spirit with which he took up chloroform, tallow for consumption, numismatics, or revivals. Simpson's pessary consisted of an hypogastric belt, to which was articulated an intra-uterine stem that kept the womb fixed in one

position. In France, Simpson met with a zealous disciple in Valleix, but as his patients died, he gradually reduced the length of the stem, so that it soon got out of the cervical canal, and Huguier stated that, in a certain number of women, by whom this intra-uterine pessary was said to be well borne, he found the stem outside of the womb. Baron Dubois affirmed that "the stem pessary had never fulfilled the promise of its inventor, either in his own patients or in Valleix's, whom he examined after treatment, or in Simpson's, by whom he had been consulted; for, as soon as the instrument was withdrawn, the deviation became as marked as before its employment." Aran stated that he had never seen a case of anteversion or retroversion cured by intra-uterine pessaries. Scanzoni abandoned their use as dangerous, and because, placed in the same field of observation as Kiwisch, he had become convinced, by an accurate examination of many of the patients in whom these instruments had been long and skilfully applied, that neither the patience of the sufferer nor the skill of the physician had been rewarded by the slightest improvement of the uterine displacements. Bernutz and Goupil do not even mention intra-uterine pessaries as remedies for anteversion and retroversion, and in America they have been given up as too dangerous. In France, several fatal cases were brought before the Imperial Academy of Medicine, and the treatment of displacements by intra-uterine pessaries was discussed at great length, and almost unanimously condemned. Simpson let the judgment go by default, for he entered no protest against the statement of Depaul, who observed, in his report to the Academy: "J'ai vivement regretté, quand j'ai voulu connaître les résultats obtenus par M. Simpson, de ne trouver que des assertions sans preuves; je me suis adressé directement à lui, mais au lieu des observations que je reclamais, je n'ai reçu que des instruments." Simpson knew the serious accidents and the deaths that had been caused by the use of his stem-pessary abroad and at home, and yet he allowed Dr. Priestley and Dr. Storer to reprint his original papers on the subject without notice of these dangerous or fatal results, without notice of the severe judgment passed upon the stem-pessary by many eminent practitioners. Dr. West has already deplored this strange omission, and I do not see how such conduct can be too severely reprobated. Partly owing to this mode of understanding the duties of a teacher, by so popular a one as Simpson, the failure of his intra-uterine pessary to fulfil its promise has not in the least damped the ardor with which his pupils still seek to find out some less offensive intra-uterine pessary. There is not a promising gynecologist who has not invented an intra-uterine pessary, and one evening, in 1874, when I had the honor of being President of the Obstetrical Society, a trayfull of thirty of these instruments were passed round for inspection. Those who do not approve of impaling the womb are still pursued by the idea that it is difficult for it to get on without some kind of external mechanical support,

and a talented lecturer at one of our metropolitan schools teaches uterine displacement to be the keystone of gynecology. It is said that the womb ought to bear mechanical appliances because the gums do, but it is only the most accurate modelling that enables the gums to live at peace with hard substances, whereas the womb is expected to bear with impunity hard bodies most roughly fitted to its outlines. Consulting practitioners[1] see the results of these misfitting instruments that so often bruise, cut, and inflame the womb and the vagina. Frequently they have to begin by removing from the vagina some twisted ring that could never have been of the slightest use to support the womb, or to correct its displacement, and which seems to have been introduced into the vagina for the sake of doing something.

Those who confide in the mechanical treatment of uterine diseases, have doubtless only been guided by the honest desire of curing their patients, but no theory more easily admits of being improperly taken advantage of by the unscrupulous. Redness of the neck of the womb, its being eroded or ulcerated, are tangible conditions to be seen, at least by those who know how to look for them; but, unless uterine displacement be considerable, no two practitioners will agree about it, for one will call considerable what another will consider slight, while one will find a womb to be displaced, which to another appears well placed. I have known practitioners lose their patient's confidence, on account of the undue importance ascribed by a consulting authority to a moderate amount of displacement attendant on the overweighting of the womb by long-continued inflammation. I have repeatedly heard of a moderate amount of uterine flexion being given to explain the absence of a family in young married women. If it be sometimes difficult to form a just estimate of uterine displacement in those who have borne children, it is much more difficult to do so when the vagina and the abdominal walls have not lost their virgin tensity. This great diversity of opinion respecting uterine deviations is not to be wondered at when one remembers the position occupied by the womb, and that its relative position has to be measured by the finger, or the sound, which is only a prolonged finger. When only guided by the sense of touch, affections of the neck of the womb were involved in great obscurity; and as it is impossible to bring the sense of vision to bear on the diagnosis of uterine displacements, their pathology is full of contested points. Nothing proves more satisfactorily the imperfection of our acquaintance with uterine displacements than the very recent recognition of the fact that anteflexion of the womb, which was first recognized as frequent by Velpeau, and considered by him to be a malformation, is only an exaggeration of the normal bend of the unim-

[1] Dr. Edis: Dangers of Intra-uterine Stems. Transactions of the Obstetrical Society of London, vol. xv.

pregnated womb. The reader may pass on if he expects me to introduce him to some new infallible pessary, for the main object of this chapter is to teach the practitioner to take a proper estimate of them, and to impress upon him that his earnest aim should be to enable his patients to do without mechanical treatment of the womb.

He can do so to a very great extent by curing those morbid states of the sexual organs that co-exist with uterine malformations. Lisfranc, P. Dubois, Depaul, Gosselin, Bennet, Bernutz, Goupil, and more recently Spiegelberg, teach that, with the exception of prolapsus uteri, uterine displacements seldom cause much suffering, and that the pain and other symptoms that accompany them are to be explained by congestion or inflammation of the womb, of its mucous lining, or of its serous envelope. It is by ignoring, or not recognizing, antecedents so important as long-continued subacute inflammation of one or several of the uterine tissues, subacute ovaritis, cellulitis, and peritonitis, or by undervaluing their agency, that the importance of flexions and versions of the womb is now so much exaggerated, whereas the womb has been so constructed as to admit of being twisted and turned with perfect impunity, so long as it be not diseased, and flooding is often the first indication that the womb has been long subjected to extensive distortion and displacement by fibrous or ovarian tumors. I established the innocuity of uncomplicated uterine displacement in the papers which I published in the *Lancet*, and I refer the reader to Dr. Meadows' contribution to the same journal, and to Dr. Goupil's work for a still more elaborate proof of the same position. Prof. Stephenson,[1] of Aberdeen, has also shown that the pains and inability to walk, attendant on uterine displacements, may be frequently removed by electricity applied to the pelvis, without in the least correcting them.

Causes of Uterine Displacements.—Their treatment must be governed by a just appreciation of the many influences on which they depend; and, with regard to the position of the womb, it is poised upon the vagina, the walls of which, in the healthy subject, are in close apposition, so that the womb is really supported by a muscular column, firmly implanted in the perinæum. The perineal floor forms the apex of a large inverted cone, of which the diaphragm is the basis, its sides being formed by the pelvis and by the elastic abdominal walls. Thus, enclosed within the abdomen, the slightly anteverted womb, standing on its apex, has an axis that is oblique from above downward and in an antero-posterior direction, with a limited range of mobility, so that this axis varies in different women, and in the same woman, according as the bladder and intestines are severally empty or full. The influence of the repletion and of the vacuity of these organs on anteversion and retroversion, has been

[1] The Constant Current in Therapeutics. Lancet, June, 1871.

well shown by Dr. John Williams.[1] The womb is maintained in its average position by the vaginal column, by the ligaments of the womb, and its surrounding organs. If the round ligaments exist in the only animal that stands erect, it may be to steady the womb; but to suppose that they are ever stretched sufficiently to keep it in its normal situation, and that anteversion of the womb depends upon these round ligaments being too short, and retroversion on their being too long, is an assertion too *square* to be in harmony with the real facts of the case. In a case, however, related by Levret, the shortness of both the round ligaments caused anteversion of the womb, which was mistaken for stone in the bladder. It used to be thought that, in cases of retroversion, if the patients are left on their backs for a time, the uterine ligaments recover their former tension, and are enabled to retain the womb in its right position; but if this can be asserted with some show of reason of the round ligaments, which contain muscular fibres, how can it be said of the broad ligaments? If the womb is partly kept in its place by its ligaments, the same result is brought about even more effectually by the pressure of the surrounding organs. Thus, if the normal axis of the womb is inclined from above downward, and in an antero-posterior direction, it is caused by the greater capacity of the recto-uterine peritoneal pouch than of the vesico-uterine, so that the bunch of intestinal folds, hanging above and before the sacro-vertebral angle, presses on the posterior surface of the body of the womb, and retains it in its right position. Unmarried women, after some unusual muscular effort, sometimes feel the ligaments give way; but this sensation only means that the womb has been suddenly forced under the intestinal mass. Thus poised on the vaginal column, the healthy womb maintains its position in virtue of the action of the forces to which it is exposed. All impulse resulting from the contraction of the diaphragm, the base of the large inverted cone, rebounds from the elastic perinæum, and the womb, by its pyriform shape, presents its surfaces so appropriately, that it is steadied and supported by the various impulses it receives. If, without departing from its normal axis, the womb descends into the vagina, it is in a state of *prolapsus* or *procidentia.* This malposition and inversion of the womb were described by medical writers of the latter part of the last century as the only uterine diplacements. Prolapsus frequently occurs in those who have had children, but Huguier has shown that it had been often confounded with hypertrophic elongation of the cervix uteri. The body of the womb may be bent on its neck so as to appear curved, like a retort, giving rise to various deviations from its normal axis. These deviations are called flexions: if the body of the womb be bent toward the rectum, the womb is in retroflexion; and in anteflexion, if it be bent toward the bladder. The axis of the

[1] Mechanism of the Production of Uterine Displacements. Lancet, August, 1873.

womb, considered in itself, remaining normal, the womb may be displaced *in toto*, and incline to become horizontal, the patient being in the erect posture. Anteversion is frequent, as may be inferred from the frequency of anteflexion; retroversion is very frequent in those who have borne children, and latero-versions are of rare occurrence. The enormous distention of the vagina by parturition, and the defective involution of both the womb and the vagina, are the chief causes of prolapsus and noticeable causes of ante- and retroversion. Besides this weakening of the vaginal column, the muscular perineal floor and the perineal fascia in which it is set, are often much weakened by over-distention, if not by laceration of the perinæum.

Having thus lost its tone, the perinæum no longer sufficiently antagonizes the diaphragm, the womb is steadily pushed down the vagina, and successive labors increase prolapsus. The additional impulse determined by any kind of over-exertion, by violent fits of laughter, of coughing, or of straining to relieve the bowels, will expedite the result; while the more shallow the pelvis, and the shorter the vagina, the more easily will the womb be forced through it. Abortion leads to prolapsus in a similar way, and prolapsus occasionally occurs in the unmarried, because menstruation is parturition on a limited scale, the womb, the vagina, each portion of the generative canal being abundantly congested with blood for about a week in every month; and a substance being expelled by forcing pains, which faithfully represent the more energetic pains of labor. Thus the process of menstruation relaxing the vagina, and rendering the womb more weighty, favors its tendencies to prolapsus, which will be sooner effected in proportion to the frequency and intensity of the forcing pains. A liability to uterine displacements is also the result of most diseases of the reproductive organs. The morbid stimulus favors the congestion of the whole generative canal; it relaxes the vagina, while it adds to the weight of the organ which it was intended to support. I have known the womb to be suddenly forced outside the vulva, after long-continued forcing pains, in a young unmarried lady suffering from chronic internal metritis, although before and after the occurrence the vagina was not more dilated than is usual in the unmarried. Too little importance has been ascribed to defective involution as a cause of uterine versions and flexions. The somewhat independent life and pathology of the neck and of the body of the womb is sometimes shown in the process of uterine involution, for the cervix may have nearly recovered its normal size and consistency, while the body may still remain large and flabby. Thus a large bag, being poised on a cervix already stiffened to its usual consistency, is ready to yield to the laws of gravitation, and to bend at its point of junction in obedience to slight pressure. This is a very satisfactory explanation of post-partum flexions and versions, and it holds good to a great extent for those that follow abortion. This

softness and pliability of the uterine walls at the point of union of the body and of the neck of the womb, clearly explains the frequent occurrence of post-partum uterine flexions; whereas, in the nulliparous womb the cavity is linear, the walls singularly firm and thick, so there is no pliability of walls to account for flexions of the virgin womb. Dr. G. Hewitt has lately stated, that in young women of a delicate constitution there is not unfrequently a considerable softening of the virgin womb, the result of the general want of tone; but until a statement so contrary to what has been observed by Dr. McClintock, Dr. H. Bennet, and by myself, is confirmed by other observers and by the records of the dead-house, I shall be disposed to fear that Dr. G. Hewitt has been unconsciously biassed by the desire to find so satisfactory an explanation of uterine malformations of the virgin womb.

With regard to cases of exaggerated anteflexion and retroflexion of the womb, Jobert de Lamballe and Caseau are right in saying that many of them are congenital. Malgaigne, in a case inspected after death, found that the body and neck of the womb folded on each other, like the leaves of a book; but when put in the right position, it was maintained. Sometimes the retroversion of the womb also causes its body to bend on its neck, continued pressure producing actual loss of substance in the parts involved in the flexure, which may become atrophied, and the flexed point is then reduced to a mere fold or hinge. In other cases, the flexed parts have been found softened by fatty degeneration, or the hinge may be fibrous. This softening and hardening of the uterine tissues at the point of flexion, may be caused by partial puerperal inflammation of the muscular tissues of the womb. Guérin has shown how certain deformities were caused by the inflammation and subsequent retraction of some muscular fibres; and it may be admitted that limited patches of inflammation in the muscular structure of the womb may determine its permanent deformity, by the retraction of some of the muscular fibres. The womb is thus less able to resist the pressure of the adjoining viscera, and so the uterine deformity is increased. When, about the third or fourth month of pregnancy, the womb becomes completely retroverted, it is just large enough to be jammed in between the sacrum and the pubes. Insurmountable constipation and the impossibility of passing urine render it urgent to replace it in its right position, and its further increase of size is soon sufficient to prevent the recurrence of retroversion. Retroversion is not unfrequently observed in the unmarried after uterine disease of long duration, and, occasionally, after violent efforts; after a fall on the sacrum; after prolonged fits of laughter; after, in fact, any violent or sudden pressure to the abdominal organs. These exciting causes of retroversion are exactly the same as those which cause prolapsus, so the mechanism of retroversion should be rather sought for in its predisposing causes. For instance, in those subject to prolap-

sus, there is frequently a short vagina, a straighter sacrum, and a shallow pelvis; whereas retroversion is generally observed where the pelvis is deep, the sacrum long and greatly curved, and the vagina long and more than usually curved, so that the womb is placed higher than usual. The anterior wall of the vagina and part of its lateral walls are firmly attached to the pubic arch, and it is obvious that for the vagina to be long and curved there must be considerable development of its posterior wall. Now, if retroversion occur, it depends not only on the womb being overweighted, but on something having debilitated the posterior wall of the vagina, or upon its anterior wall being congenitally too long. In pregnancy, this may be the result of its having been over-distended, to permit the child's safe passage through a narrow channel, and I have said the same result may follow abortion, habitual dysmenorrhœa, and chronic uterine disease. If the womb be kept in position by the pressure of the distended bunch of intestinal folds on its posterior surface, retroversion is likely to be produced by prolonged dorsal decubitus, in which the inflated intestines will rise above the womb and gradually depress it. Thus, on opening two patients who had long to lie flat on their backs for the cure of fractures, Huguier found the womb lying flat on the pelvis under the intestines; and Robert cites two cases of complete retroversion of the womb, in women who remained long on their backs for paraplegia or typhus fever. It will be easily understood, that if the mesentery, from which depend the intestinal folds, or if the folds themselves are shorter than usual, the displacement of the womb will be facilitated. The *modus operandi* of a fall in producing retroversion desires attention.

If the ligaments of the womb really retain it in position, a fall on the sacrum, or a great muscular strain, might impart a concussion, but would not cause displacement; whereas by a fall on the sacrum the womb may be forcibly impelled under the half-inflated intestines, and there remain; or on some sudden strain being made, to take hold of an object highly placed, or by the rapid, violent concussion of the abdominal walls, the womb may be forced to pass under the intestines. The sensation felt is as if something had suddenly snapped within the body, as if something had given way, and is not caused by the rupture of a ligament, for this has never been found, but by the sudden displacement of the womb; and on replacing this completely retroverted womb, it returns rapidly to its right place, as if by a kind of suction.

Latero-flexions of the womb have been observed in infants; they are sometimes rectified by the changes that take place at puberty, but some persist irrevocably. Thus, Tiedemann gives drawings exhibiting an extreme degree of uterine obliquity, arising from the unequal development of the two halves of the womb. Morgagni found the uterus forcibly deviated to one side of the pelvis by the diminished length of the corresponding broad ligament; there was no tumor, no trace of previous inflam-

mation to explain the malformation. The lateral flexion of the womb was produced by the absence of the round ligament in two bodies examined after death by Huguier. Pelvi-peritonitis is a very frequent cause of uterine deviations that has been too much lost sight of, although it often follows miscarriage and parturition. Nature sometimes works a cure, by stretching inflammatory bands, but the consequences may be felt ever after by the womb. Many pathologists have noted the frequency of the sequelæ of peritonitis in the pelvis; and Bonnet has asserted that on examining the state of the pelvic organs of all those dying at the Hotel Dieu of Lyons, he found that in four out of five, who had complained of what are commonly called uterine symptoms, there was pus, thickening, or false membranes about the broad ligaments, causing deviations of the womb which no pessaries could have corrected. This cause of uterine displacements has been demonstrated superabundantly by Drs. Bernutz and Goupil, who have confirmed, by numerous post-mortem examinations, all that I advanced twenty-five years ago regarding the frequency of peritonitis in the vicinity of the womb and of the ovaries.

Symptoms.—In the latest works on uterine deviations, it seems as if the authors had ransacked books on uterine pathology to discover all the possible symptoms of the various forms of uterine disease. Dyspepsia, intercostal neuralgia, hysteria, vomiting, have been given as symptoms of uterine deviations, and a twist of the mind has been accounted for by a twist of the womb. In asserting that there are no pathognomonic symptoms of uterine deviations, I only affirm what is true of all other deformities. The symptoms most complained of are feelings of uneasiness, or weight, at the lower part of the body, with bearing-down sensations toward the anus. There may also be pains in the back, in the inguinal region, or in the inner part of the thighs; these pains are much increased by walking—over-walking renders them intolerable—while the reclining posture relieves, and often lulls them completely. Partial paralysis of the lower limbs, and all the nervous symptoms produced by uterine diseases, are often noticed. Constipation and urinary disturbance may also exist, and the disturbance of the menstrual function is not uncommon—the discharge being either too abundant, too scanty, or too painful. These symptoms are more constant in extensive retroversion, and occur now and then in cases of anteflexion, which are in general harmless, as stated long ago by Velpeau, unless the womb be also diseased. Scanzoni exaggerates the influence of uterine flexions in producing dysmenorrhœa by the interruption of the menstrual flow; at all events I have not found them to do so, unless the body of the womb was completely folded on its neck.

Such are the symptoms attributed to uterine deviations; but exactly the same symptoms often attend early pregnancy, miscarriage, and many

uterine affections; some women will even present these symptoms without its being possible to trace them to any structural change of the womb. The simply neurotic nature of the symptoms attendant on some cases of uterine displacement, is shown by the fact, that without in the least diminishing the so-called strangulation of the womb, or altering its bad position in relation to its neighboring organs, Prof. Stephenson, of Aberdeen, has repeatedly found that the inability to walk, and the distressing symptoms of retroversion and of retroflexion have yielded to the use of the continuous current, as described at page 78, so it would be well worth while to try this remedy before impaling the womb on one or other of the thirty and odd implements recommended for that purpose. The innocuity of uterine misplacements when *uncomplicated* by disease, is generally admitted in France and in Germany, and indeed it could scarcely be otherwise, for the final destination of the womb necessitated such arrangements as would ensure to it the greatest possible latitude of movement in the midst of organs so constructed as not to feel pain, or to have their functions disturbed by very extensive alterations in the shape or position of the womb. The frequently occurring uncomplicated cases of uterine displacements are only accidentally discovered; the complicated cases come to us to be variously examined, interpreted, and treated. An idea of these complications may be gathered from the statistics published by Dr. Saussier. In 102 cases of uterine deviation, he found it complicated by one or more of the following diseases:

Ulceration of the os uteri in	67 cases.
Engorgement of the body of the womb in . .	53 "
" " neck of the womb in . .	39 "
" " broad ligaments in . .	68 "
Extreme uterine sensitiveness in . . .	91 "
Uterine catarrh in	71 "

Dr. Goupil found the womb anteverted in 16 out of 36 women who had had pelvi-peritonitis, and who had borne children. Dr. Emmet asserts that peri-metritis generally coincides with retroflexion.

Unless the bladder be diseased, or the womb inflamed, its displacement has little influence on micturition, for the bladder has been made to bear with impunity extremes of pressure, externally or internally applied, and it is unjustifiable to explain vesical symptoms by moderate displacement of the womb; when, however, a voluminous womb lies right across the pelvis, it so presses the bladder as to often render urgent its frequent evacuation. Under similar circumstances, the pressure of an enlarged womb is a mechanical cause of constipation, most marked in retroversion. The sensation of a weight and forcing toward the perinæum is often complained of, and often said to be more distressing than pain. Theory states

that this sensation should be more felt in cases of prolapsus than of procidentia, but it is not so, and when the womb is visible between the thighs, women complain greatly of exhaustion and incapacity for exertion, but they do not complain of bearing-down pains, and they are often able to move about. Theory suggests that fibrous tumors of the womb, by their pressure on the rectum, ought to produce bearing-down sensations; but very frequently this is not the case. The bladder and rectum are often forcibly pressed, without the patient experiencing any great inconvenience; or, in other words, the sensation of weight is not always felt when the womb is forced out of the body, or when it is pressed down by solid tumors. Women suffering from uterine catarrh, from erosions, from ulceration of the neck of the womb, often do not complain of forcing-down pains, while others, in excellent health, suffer much every month from forcing pains a few days before the menstrual discharge, and during the first day or two of its flow. These forcing pains are signs of the ovarian nisus compelling the womb to rid itself of its contents, and represent the stronger pains by which the womb is forced to expel the produce of conception. Women suffering from habitual congestion and enlargement of some portions of the womb, often complain of the sensation of weight; thus a few minutes after a patient affected with retroversion of the womb has left her bed, she will sometimes complain of bearing-down pains, yet on examination the womb may not be found more retroverted than when she was previously examined in bed, though her sufferings will last until she again lies down. It is easy to say that bearing-down pains are caused by the dragging of the ligaments of the womb, but as the forcing pains are often absent in prolapsus of the womb, when the uterine ligaments are most strained, this explanation falls to the ground. In women, at the approach of menstruation, in such at least who are affected with chronic congestion of the womb, the forcing sensations are in direct proportion to the determination of blood to the womb. When women affected with uterine deviations have forcing sensations on assuming the erect posture, they are probably caused by the over-distention of uterine blood-vessels deprived of valvules. In other words, it is congestion alone, or complicating uterine disease, which causes the pain attending uterine displacements; so it is relieved by whatever relieves congestion; and as the pain of varicocele is relieved by a suspender, so the pain of uterine displacement is sometimes removed by an instrument which supports the womb in its right position. This explains why a certain amount of dysmenorrhœa frequently attends all deviations, and if the menstrual flow be scanty, the congestion is greater, and the pains proportionately worse. In rare cases, the cavity of the womb may be unable to empty itself of the products of menstruation: it will then be right to seek to rectify the bend of the womb so as to give passage to the retained menstrual fluid, this retention is then demonstrated by the sud-

den gush of fluid after severe forcing pains; but this should be done by means of an elastic catheter, used with very great care, and after due preparation of the case by antiphlogistic measures. The forcible use of the uterine sound is to be deprecated, for when anteflexion is congenital, or the result of fatty degeneration, or has been made permanent by peritonitis, it is impossible to rectify the womb, and it would be utterly useless to insist on doing so, as the flexion would recur on the withdrawal of the sound.

The ovaries are often more or less irritated in cases of retroversion; they are sometimes inflamed, oftener congested, by some obstruction in their returning circulation, and Dr. Rigby has pointed to ovaritis as a possible result of long-continued pressure of the womb on the ovary. Dr. Saussier found engorgement of the broad ligaments in 68 cases out of 102, and many of the distressing symptoms attending retroversion are to be referred to these complications. In many cases the uterine deformity is slight, and still the pains are very severe; and in the same way limbs recovering from fractures, contusions, or inflammatory affections, often remain long affected with annoying sensations of distention, heat, itching, or pain. This may be the case with the womb after the cure of inflammation. There may remain a neuralgic affection, bearing no proportion to the amount of the displacement, being sometimes intense when the deviation is slight, or when the deviation is extensive the uterine neuralgia may be slight. These nervous symptoms have been cured by the sharp surgical measures ineffectually adopted to rectify the deviations. Even prolapsus may take place to a great extent without its usual symptoms; usually, however, there will be forcing pains and disturbance of the bladder and rectum, for half the misery caused by procidentia of the womb depends on cystocele and rectocele, and on the subsequent displacement and inflammation of the mucous membranes of both the bladder and the rectum. In some women, after the cessation of menstruation, prolapsus of the womb is more inconvenient than painful: prolonged exposure to the air causes the mucous membrane of the vagina to resemble the skin, and its sensitiveness is so diminished, that large ulcers no longer produce the pain or the usual symptoms of ulceration of the womb.

The diagnosis of uterine displacements was almost impossible before Simpson showed the mode of using the uterine sound, the utility of which had already suggested itself to Récamier and Osiander. In anteversion, for instance, the patient lying on her back, the sound is to be introduced with its concavity forward, and is to be so turned as to right the womb. The left index should remain in the vagina till the sound is withdrawn, and if the finger feels the womb returning gradually to its false position, it may be assumed to be bound by adhesions to the abdominal walls or to the viscera. Should it be a case of retroversion, the sound will be introduced with its concavity downward, and efforts are to

be gradually made to raise the womb out of the sacrum, and the sound is to be rotated, so as to give an upward direction to the fundus. In the meantime the left index, placed in the rectum, should act in harmony with the sound, and gently press the womb in the same direction. If, on the withdrawal of the sound, the finger in the rectum feels the womb quickly returning to retroversion, pelvic adhesions may be suspected. By means of the uterine sound Huguier was also able to establish the distinction between prolapsus of the womb and elongation of the cervix.

The progress of most cases of uterine deviation may be inferred from what is known of the march of chronic uterine inflammations, and the uterine affections which most frequently complicate deviations. Sometimes the neuralgic character of the sufferings attending uterine displacement is shown by their sudden subsidence, while the deviation remains the same. This sudden subsidence has been known to follow a serious illness, a reverse of fortune, an imperative necessity for exertion, or some sudden shock to the nervous system. In other cases these pains, which keep so many women on the sofa, wear themselves out and gradually disappear at the change of life. Women from forty to fifty have never consulted me for those uterine deviations which I have accidentally discovered. After the cessation of menstruation, the ovaries cease to be the powerful centres of nervous energy and the periodical centres of attraction for the blood, and of prolonged efforts to expel it; so, in proportion as the womb becomes atrophied and less weighty, its deviations become less and less apparent, and the contracted vagina is better able to support the womb.

General Treatment of Displacements.—It will be obvious from what precedes, that displacements of the womb would seldom require mechanical treatment, if the congestion, inflammation, and neuralgia by which they are complicated, were treated as I have advised in the preceding chapters. If, on careful examination, women who suffer from uterine deviations are found to be likewise affected with congestion, ulceration, and inflammation of the neck of the womb, the pathologist should infer that the pains experienced depend upon these organic lesions. At all events it is bad practice to treat such cases by mechanical measures before curing these inflammatory lesions. If this be done, in many cases the enlargement of the body of the womb will diminish, and likewise its displacement or contortion. The most ardent supporters of the mechanical treatment of uterine deformities should begin by eliminating the inflammatory element; for the stem-pessary will not be borne if the cervix be lined by an inflamed mucous membrane, and as its previous treatment by fuming nitric acid has been advocated to enable the cervix to bear the pressure of the stem, I may fairly recommend the same measure as the best means of being able to do without the stem-pessary. When the displacement is congential, or of long standing, the cure of attendant in-

flammation does not correct it; but if, while a tonic plan of treatment is being followed, opium suppositories are used at night, and astringent injections, and perhaps electricity, then I find that my patients soon become able to attend to their household duties, and to walk a mile or two without being made the worse. There is, however, one condition essential to the efficacy of this plan of treatment, that is to make light of displacements or of deviations when speaking of them to patients; to frighten them more or less by telling them their womb is dislocated or strangulated, paralyzes that responsive effort by which a patient must often concur to give efficacy to treatment.

The importance I have attached to the relaxed state of the vagina, in the mechanism of retroversion and anteversion, explains the value of prolonged astringent injections, the changes being rung on strong solutions of alum, sulphate of zinc, or tannin. The action of such remedies may be very often maintained by the occasional use of suppositories containing either alum or iron-alum, tannin or matico, and I sometimes enclose in cotton-wool a little lump of alum about the size of a hazel-nut, and tie round it a piece of string, long enough for the ends to hang out of the pudendum when the alum-ball is placed as high as possible in the vagina. The cotton-wool imbibes the vaginal fluids, and they dissolve the alum by degrees, which thus acts strongly on the walls of the vagina. So great is the astringent action, that it becomes difficult to pass the finger through the vagina so as to reach the neck of the womb. The cotton-wool is to be removed the next day, and water is to be freely injected, so as to bring away the thick, coagulated mucus, which would diminish the effect of the subsequent injections. The well-known constricting power of cold when permanently applied to animal tissues, suggested its trial, and it is often useful when applied by vaginal douches for fifteen or twenty minutes once or twice a day. Douching the loins, while the patient is perspiring freely from the use of the spirit-lamp or Turkish bath, has often relieved the pains that complicate displacements. Indeed, my experience convinces me that much may be done to remove the neuralgic symptoms of deviation by cold-water treatment; and that it is injudicious to attempt to relieve uterine displacement by instrumental interference without having previously tried these remedies.

Struck with the fact that patients only suffer from uterine deviations when they are standing or walking, and are often free from pain at night, it was inferred by some, that prolonged repose in the horizontal posture would restore strength to the weakened ligaments of the womb. Lisfranc, therefore, prescribed lying on the back for a year or more; this effectually weakened the constitution without strengthening the uterine ligaments or curing the deviation, and the plan has gone out of fashion. Resting for an hour or two on the sofa in the middle of the day is, of course, advisable, to diminish pain and pelvic congestion. It is not neces-

sary to abstain from connection, provided care be taken not to jar the womb, but I have known patients who only suffered from uterine deformities for the day or two which followed connection, and others who are never well, except during the absence of their husbands. There is also another precept easy to explain and difficult to enforce, that is, to consider the monthly period as a disease. Some patients never suffer, except a few days before and after menstruation, and I have considerably abated their sufferings, and sometimes removed them, by persuading them to remain in bed, or on the sofa for a few days, using hip-baths and large, warm abdominal poultices. If the patient be married and bearing children, there is a chance of Nature curing, in a perfect fashion, infirmities that we relieve in a more or less bungling way. The long physiological rest of the womb from menstrual irritation during pregnancy and lactation is evidently calculated to modify, favorably, uterine displacements. It has not always prevented the reappearance of congenital flexions, but, in my practice, two cases of marked anteflexion of the womb disappeared after parturition; in three cases, considerable anteversion; while in two, retroversion was removed by the changes which take place in the puerperal womb. Scanzoni mentions three cases of anteflexion being cured by pregnancy; and Goupil states that, on carefully examining two women, three months after their confinement, he could find no trace of the retroflexion of the womb, of which, before pregnancy, he had distinctly ascertained the existence. While pregnancy rectifies uterine flexions and displacements, the nutrition of the uterine tissues is so wonderfully active, that those diseased materials which caused the unimpregnated womb to bend on itself, may be replaced by sounder tissues, which will enable the uterus to start on a new career in a right shape and position. Hence the obvious indication to consolidate this improved position of the womb, by keeping the patient on her back much longer than is usual after her confinement; and it is also right to continue lactation as long as possible. Astringent injections should be made twice a day, when the lochial discharge has ceased to be red, and they ought to be continued for months. In the after-treatment of parturition, we do not sufficiently enter into the views of Nature, and forget that the womb is then more amenable to treatment, on account of the absence of the menstrual congestion, which at other times so frequently interferes with our attempts to cure.

Although desirous to restrain the early resort to the mechanical treatment of uterine misplacements, and to check the prevailing tendency to depend too much on mechanical contrivances, I admit the advisability of trying how far they can be useful. 1st. When all inflammatory lesions being cured by the means mentioned, displacements are still attended by considerable inability to walk, or by other distressing symptoms. 2d. When adequate improvement does not follow a fair and prolonged trial of constitutional remedies, in which case it may be prob-

able that the rectifying the shape or the position of the womb might check its tendency to congestion, and allow a more healthy state of nutrition to effect a cure.

Bandages.—It is usually stated that bandages relieve the womb from the pressure of the intestines; but Dr. Barnier ascertained experimentally that they diminish the abdominal capacity, render the womb less movable, and diminish its tendency to prolapse. I have assured myself, by a minute examination of patients, that bandages do not straighten a flexed womb, nor replace it when it is displaced; if they give relief, it is by coming to the rescue of the over-distended abdominal walls. They diminish abdominal capacity, and support the womb by the more powerful contraction of the perineal muscles, while all the abdominal viscera are more firmly pressed together, as in a well-formed, healthy woman. It is, indeed, impossible not to admit that the excessive mobility of the womb sometimes causes all the sufferings of women, since they are entirely relieved by merely wearing hypogastric bandages, which steady the womb, while every other circumstance of the case remains the same; this is why the same hypogastric bandage is equally useful in all varieties of uterine displacement, except in prolapsus. This is so true, that I have patients with uterine flexions who, when thin and out of health, suffer from the usual train of uterine symptoms, who cease to suffer when they grow fat, because the deformed womb is better supported, in the midst of pelvic organs well-cushioned and padded with fat. If deviations of the womb determine excessive irritability in the adjoining nerves, and if these sufferings are best appeased by all such measures as will render the womb less movable, it exemplifies in uterine pathology a general law, which renders the slightest movement agony for those having a sprained ankle, a gouty limb, or whose heads are racked with nervous headache. The value of *rest* in surgical diseases, on which Mr. Hilton has so ably written, is of such paramount importance in uterine surgery that I believe much of the utility of pessaries is to be ascribed to the more or less effectual way in which they fix the womb.

Hull's hypogastric bandage, with a vertebral support and a hypogastric shield wedded to each other by a steel C-spring, is still a favorite; three were on the stocks when I was last at my instrument-maker's, and it probably suggested the much more complicated bandages that have been extensively advertised in America, and are said to give great comfort to patients. Hull's bandage acts by applying increased pressure to the womb, and it may sometimes slightly correct uterine deviations; but, in many cases, though the bandage has removed the pains, I found, on examination, that anteversion was just as extensive whether the bandage was on or off. It therefore relieves by steadying the womb, and is as useful in uterine flexions as in retroversion and anteversion. Some patients accustom themselves with difficulty to this bandage, and this

may be in consequence of some unsuspected cause of irritation, which should be allayed, and the bandage again tried for a few days. It is useful for women who have considerable abdominal weight to support, and I have found it useless and not easily borne by those who are thin and flat-bellied. With Dr. Hull's bandage, the pressure is applied to the womb through the lower part of the abdomen; but with other abdominal bandages methodical pressure is applied to the whole of the walls of the abdomen. Vulcanized india-rubber belts, with a variable amount of inelastic material, have the great advantage, of being as well borne by thin patients as by the fat; though there are some who can never accustom themselves to the lightest and best made bandages, on account of the discomfort they occasion, or they may cause erythema, if not frequently left off, particularly in hot weather. A patient, in whom the womb was considerably anteverted, was much relieved by wearing an ordinary double hernia belt, which has also been useful to other patients residing in India, who much prefer it to an elastic bandage.

This interpretation of the action of abdominal bandages is confirmed by the utility of abdominal pressure after parturition and in several nervous conditions. It is said that, when the late Emperor of Russia loosened his stays, the sudden collapse of the tightly-pressed viscera caused an extraordinary amount of prostration.

Prolapsus and Procidentia.—This kind of uterine displacement, more than any other, has distinct symptoms, which often justify mechanical treatment and surgical operations. To keep up a moderately prolapsed womb much may be done by the occasional application of styptics, the frequent use of cold astringent injections, alternately using a decoction of oak bark and a solution of iron alum, as in the case of a lady, forty years of age, who had borne three children, and who consulted me for moderate prolapsus of the womb, causing very distressing sensations. After strengthening the walls of the vagina by injecting a solution of nitrate of silver twice a week, alum and acetate of lead injections were used on alternate days. This was sufficient to prevent the recurrence of the symptoms of prolapsus, although judicious advice had previously failed. If a moderately enlarged womb is outside the body, it should be lightly touched with nitrate of silver, if it be ulcerated, and then replaced as soon as possible; this may not only quiet pain and relieve exhaustion, but will prevent the uterus from getting irrevocably fixed in a false position, which would occur if pelvi-peritonitis set in before the womb was reduced. When it is really prolapsed, the womb slips back without pain, whereas, on attempting to force back a very elongated cervix, one can curve it and strain the uterine ligaments, but, on ceasing the effort, the womb will again project. If the womb is too voluminous to be returned, its size should be diminished by scarifications and saturnine lotions, which may render replacement possible. If not, it is well to follow Dr. McClin-

tock's advice, and to treat it like an inflamed testicle, by strapping the tumor round with strips of adhesive plaster once, or oftener, at a few days' interval, until its size is sufficiently reduced. The patient should be placed on her elbows and knees, and the surgeon will then force the womb back into the pelvis by pushing its neck up in the right direction; will he afterward replace the hypertrophied folds of the vagina.

Perinæal Pad.—This forms part of Hull's bandage, and is of itself very useful in cases of moderate uterine or vaginal prolapsus. The pad is best made of india-rubber.

Globe Pessaries.—The pessaries which forcibly distend the vagina, like the elytromochlion of Kilian, or Dr. Reid's gutta-percha spring-pessary, are objectionable, on account of the vaginal irritation to which they give rise, so I prefer those that support the womb without forcible dilatation of the vagina. The globular pessary, in boxwood or vulcanized India-rubber, though theoretically inexcusable, is often useful; and, when combined with rest and astringent injections, I have seen it have a curative action, insomuch that the size of the instrument could be gradually diminished, and at last dispensed with; I therefore agree with Dewees, Ashwell, and Dr. McClintock, that patients have been not only relieved, but cured by globe pessaries. Even when removed every day air-pessaries often increase vaginal secretions and distend the vagina, so that it becomes necessary to increase their dimensions; and I have twice seen the menstrual flow repeatedly brought on by wearing a moderate size pessary which gave no pain.

What has been said of globe pessaries applies to those made of india-rubber, but I have left off recommending them, because it is difficult to properly fit them, and because the soft india-rubber of which they are made, becomes in a short time very foul and irritating, and gives rise often to excessive leucorrhœa. Now and then, even the softest inflated pessary, which seems incapable of injuring the parts, will cause an astonishing amount of ulceration in a very short time. Baron Dubois told me he had been occasionally consulted by women, who had not been able to walk for years, but who suddenly acquired the power of doing so, by the application of an air-pessary, and that, after wearing it for a few weeks or a few months, they were able to do without it, although the uterine displacement still continued the same. A young married lady consulted me for continued pains in the sacrum and loins, accompanied by bearing-down pains, which were increased by the slightest exertion, so that walking was intolerable. Her sufferings commenced two years previously, after her last confinement. Many persons had been consulted, but neither they nor I could find anything the matter with the womb, no organic lesion or deviation. Cold-water douches, sedatives, and injections gave little relief, and it occurred to me to examine the patient in the standing posture. The womb did not appear prolapsed or deviated,

but on raising it with the tips of two fingers introduced into the vagina, the patient exclaimed, "You have taken away all my pains." I applied an air-pessary, which gave permanent relief and was worn for six weeks, at the end of which period the patient was able to discontinue its use. Subsequent examination has enabled me to ascertain that the pessary had not produced any alteration in the elevation or position of the womb. Dr. Debout has mentioned a similar instance in the *Bulletin Thérapeutique*. Those who introduce box pessaries should warn their patients, that if they do not remove them occasionally and clean them, they will become rough with saline incrustations, which may wear into the womb, the rectum, or the bladder. At the Salpêtrière, it is not at all uncommon, on making post-mortem examinations, to find long-forgotten and irremovable pessaries. Such things should be removed before the change of life. One of my patients, about fifty, had a boxwood ring pessary introduced into the vagina, and it had remained there ten years, when I tried to remove it, but menstruation having ceased for two years, the vagina had become contracted and I could not extract it without breaking up the pessary, which was crusted with saline deposits. To remove the round boxwood pessaries, Dr. McClintock uses a corkscrew with a long stem; after introducing its point into one of the holes of the pessary, he turns the screw several times, and then withdraws the instrument.

Other Pessaries.—If I am right in supposing that various misfitting pessaries may occasionally lead to the gradual contraction of the vagina by keeping it in a constant state of gentle irritation, then the simplest possible ring might do, and one lately brought out by Messrs. Salt, of Birmingham, would be as useful as any. It is a watch-spring spirally coiled, encased in caoutchouc, is easy of introduction, and tends to spring back to its circular shape when once in the vagina. The old ring-pessary, or that of a circular or an oval shape, is often sufficient to render prolapsus supportable; those made of vulcanite stand the secretions best, and those made of vulcanized india-rubber distended with air are objectionable, though commendable for their softness. A considerably prolapsed and heavy womb is often well supported by Mr. Coxeter's gutta-percha pessary, which resembles a funnel, its mouth being covered with thin vulcanized india-rubber, for the womb to rest upon, and pierced with holes for the secretions to pass through the tube. This can be easily introduced by the patient, worn without discomfort, and its frequent demand is a proof of its value. Similar to this is another still lighter pessary, devised by Mr. Coxeter, which he calls a spring pessary, but the spring only serves to distend a thin india-rubber cup, destined to support the womb. The other end of the pessary is so easily fixed in the perinæal band that the patient can remove, fix it, or draw aside the band without unfastening its straps; a greater convenience than would be at first imagined, and both these pessaries are cheap. M. Bourjeaud's mushroom

or pyramidal pessary imitates one described by Juvile, and said to consist of an oval cuvette, with a central hole and short tube; but instead of being made of solid india-rubber, M. Bourjeaud's is made of vulcanized india-rubber, and, if introduced empty, it can be inflated by a tube, to whatever extent may be necessary. When the apparatus is distended, it is well calculated to receive the neck of the womb in the depression on the upper part of the instrument: through the hollow stem any discharges may escape, and india-rubber imparts that elasticity which others sought to obtain from metallic springs. The apparatus is secured by elastic bands, which may be fastened to a narrow abdominal belt; it seems well calculated to fulfil the objects of a pessary, two of its advantages being, the possibility of regulating its size, and of diminishing vaginal irritation.

Zwancke's Pessary.—This is intended to support a voluminous descending womb, by a kind of artificial floor. When introduced it is something like a large bean, and the flanges of the expanded instrument resemble the cotyledons of the germinating seed. Mathieu, a Paris instrument-maker, had the ingenious idea of opening and folding up the instrument by means of a screw placed in its stem, which does not increase its bulk; and the hole in each cotyledon is quite sufficient for the free passage of the secretions. Dr. Clement Godson has improved upon the instrument usually sold, and it would do little harm if women would remove it themselves or have it removed at least once a month. They should be distinctly told so, for some of them are so tolerant of ulceration, that the vesico-vaginal wall can be deeply cut into, without causing much pain. It is the dread of the withdrawal and of the resetting of the instrument that keeps women from returning, and the vesico-vaginal tissues may be cut through, as related by Mr. Churton of a patient aged sixty, who had worn one for two years. A rent large enough to admit two fingers existed at the time of the removal of the instrument. This wound nearly closed up without operative interference, in about two months. A similar case occurred to Dr. Hope, in the out-patient department at St. Bartholomew's, where a large vesico-vaginal fistula was caused by wearing a Zwancke pessary for fourteen months. In a case under the care of Dr. Wiltshire at St. Mary's Hospital, a Zwancke pessary made fistulous openings between both the bladder and the rectum. Mr. Heath has also recorded a remarkable example of the ill effects of Zwancke's pessary, which had been neglected by the patient, for although ordered to have it removed occasionally for cleanliness she left it *in situ* for many months. The result was that when she sought relief, there was a large communication between the vagina and the rectum, and the end of the pessary was forced right into the bowel. Dr. Protheroe Smith was not able to remove the pessary, which was done with considerable difficulty by Mr. Heath after it had been

broken in pieces, the patient being left with a large incurable recto-vaginal fistula. To conclude this list, Dr. M. Sims has known this pessary to sever the urethra from the neck of the bladder, cutting quite down to the vesical membrane, but not through it.

Tow-Pessary.—When the uterus is in a state of complete prolapsus, it has been recommended to replace it, and then fully to plug the vagina, with tow, or with finely carded oakum, called "antiseptic marine lint," or with chloralum cotton-wool. These substances being compressible, do not keep the vagina uniformly stretched, and allow it a limited power of contraction. The pressure being equally distributed is said to give no pain, and the material is not displaced by any pressure or weight exerted upon it by the uterus itself, or by muscular efforts in defecation, for it clings as it were, to the walls of the vagina; and this, combined with the resistance of the sphincter, effectually prevents it from being displaced. When once the oakum is applied, the patient may go about her usual occupation, and defecation and micturition are said not to be interfered with. The vagina should be replugged every week, less oakum being required each time; and not the least advantage of the treatment, for many poor hard-working women, is that they are said to be able to thus apply the oakum to themselves. This seems a barbarous, rough kind of treatment, but it has been found effectual by Dr. Copeman, of Norwich, and highly praised by Mr. Morgan, of Litchfield, so it must be useful in some cases. Like the boxwood pessary, but still more effectually, the oakum gently irritates the vagina, and promotes its gradual contraction. I trust this may be found more deserving of adoption than a similar mode of treating retroflexion, to which Huguier gave his sanction. After replacing the retroflexed or the anteverted womb, he introduced into the rectum a tent made of tow, five inches long, and from two to three broad. He examined occasionally, to see if the womb had diverged to the right or to the left of the tent, which was to be replaced and kept in for about three months, during which time the patient was only allowed to relieve the bowels once a week, and much less frequently if possible, by spare diet and concentrated food. I never heard of anybody else adopting this plan of treatment, it certainly will not do for the Anglo-Saxon race, and may be classed with the treatment of anteflexion by the daily retention of urine, as long as possible.

Sponge Pessary.—A regularly shaped oval sponge, about two inches in diameter, with a well-formed cup should be chosen, for the natural surface of the sponge irritates the vagina much less than the cut surface of the same sponge. After soaking it in water for twelve hours, a thread being tied to it; the patient should introduce it as high as possible. It should be removed at night, well cleaned, and left in water or in a weak solution of alum, tannin, or perchloride of iron, and reintroduced the following morning; the necessity of taking these precautions sufficiently

explains why the poor will not attend to them. This is the proceeding of those who feel they must do something, and who still wish to do as little as possible.

Cauterization.—Géradin proposed to form contractile cicatrices, to narrow the vagina, to increase the resistance of its walls, and even to completely obliterate the canal. Laugier cauterized the vagina with acid nitrate of mercury, and M. Velpeau applied the actual cautery. The objections to cauterization are, the difficulty, especially with the actual cautery, of limiting the extent of its application, and the danger of injuring neigboring organs, which render it necessary to cauterize superficially, and therefore insufficiently, so nothing has come of these attempts.

Excision.—Marshall Hall proposed the removal of an elliptical piece from the anterior wall of the vagina, the edges being immediately united by suture, and Mr. Ireland recommended the removal of a quadrilateral flap on each side. Velpeau preferred removing pieces from the anterior and posterior walls, and treating the rectocele and cystocele which are brought on by prolapsus uteri; but the prolapsus returned in a few months. The tediousness and difficulty of this operation, its liability to injure the bladder or the rectum, and the chance of lymphangitis, and of purulent infection, are objections to its performance. It is not even effectual, for although Scanzoni produced a contraction of the vagina in thirteen cases by means of this operation, it did not prevent the recurrence of the prolapsus.

Suture.—Bellini proposes to include a fold of the vagina in a suture so as to produce sloughing. But the fold may be too deep, and hemorrhage may be produced; or the long presence of the sloughs may irritate the parts, and expose the patient to the risk of lymphangitis and purulent infection. The instruments used by Desgranges are small self-closing curved forceps, furnished at the end with projecting teeth, intended to seize a certain number of folds of the vagina; a holder resembling a pair of lithotomy forceps, but having the end of one branch channelled, for the purpose of applying the small curved forceps; a trivalve speculum; a lithotomy gorget; a pessary to distend the vagina, and a double T-bandage. M. Desgranges has never made more than ten applications of the instrument, and he says that the surgeon must be guided by circumstances in judging of the proper number of applications, it being better to make too many than not enough. The pain is not great, unless the cervix uteri be seized, then it is severe, radiating to the loins and abdomen. When the forceps have fallen off, a suppurating wound is left, and by digital examination small hemispherical projections are felt, varying from the size of a pea to that of half a cob-nut. The vagina gradually loses its calibre and its mobility. At a later period it becomes covered with inodular bands; the narrowing goes on until the finger can scarcely be freely introduced. In process of time the cicatrices become smaller,

and even disappear; the vagina regains its suppleness; its contraction affords no impediment to connection, and in one case did not prevent delivery.

Dr. M. Sims seems to adopt a somewhat similar but less complicated process. His plan is to narrow the vagina by cutting off slips of mucous membrane at appropriate distances from each other, either on the anterior wall of the vagina or the posterior as the peculiarities of the case seem to indicate, and then bringing the cut surfaces together by silver sutures. This narrows the vagina to about one-third of its breadth, the denuded surfaces having the shape of a trowel, the cross-section being in front of the os uteri, and the apex pointing to the neck of the bladder. Dr. Emmet claims to have performed this operation for the cure of procidentia, a year before Dr. M. Sims read his case to the Obstetrical Society of London, and the former assures me that he has since had two cases in which all the sutures gave way except that of the cross-section, which was, however, sufficiently strong to retain the womb *in situ*.

Narrowing of the Vulva.—Diffenbach excised a series of longitudinal folds round the orifice of the vagina, with very questionable success. Malgaigne believed that the excision of the anterior or the posterior semi-circumference of the vagina would be of more advantage than other methods; but he was unsuccessful in his only case. Scanzoni excised a portion of the vulva in five instances, but it did not prevent the recurrence of the prolapsus.

Fricke, of Hamburg, proposed to unite the walls of the vulva by paring the internal faces of the labia majora, and uniting them by suture, as in perinæoraphy, leaving an aperture behind for the passage of the fluids, and one in front for the performance of the generative functions. The uterus was to be thus sustained by an artificial floor; but this was too low, and the treatment only ended in the substitution of one infirmity for another. When the prolapsus is caused by laceration of the perinæum, the only chance of a remedy is to be found in the several operations advised by Stolz and by Bosjeman. The failure of these ingenious operations to cure a common and distressing complaint need trouble us less if it can be easily cured by plugging the vagina with prepared oakum, so the plan should be fairly tried. In very rare cases there is an heroic way of getting out of the difficulty.

Amputation of the Womb.—When the womb has long lost its right to pelvic residence, by contracting adhesions that prevent its being returned, its removal is comparatively unattended by danger. Thus three-fourths of the cases of inversion of the uterus of long standing, in which amputation was performed, were followed by recovery, and Mr. Edwards of Denbigh so successfully removed a large prolapsed uterus from an old woman, that she was walking about three weeks after the operation.

Uterine Flexions.—Bracing up a softened cervix is a more rational way to straighten a womb than passing a stem through it, and the idea has occurred to several, but there is no accepted way of carrying it out. It has been seen, that in some uterine deviations the tissues appear hardened and retracted at the point of flexure. Récamier sought to imitate this in a case of uterine retroflexion, by cauterizing the internal surface of the anterior portion of the womb, so as to excite the retraction of the fibro-muscular tissue, and thereby straighten the womb. La Faye, of Christiania, has used potassa fusa c. calce in a similar way, for the same purpose, and the application of fuming nitric acid to the cervical canal is a step in the same direction. The same idea is being worked out by a prominent American gynecologist, Dr. Goodell, who introduces into the cervix a powerful dilator, and then and there dilates it, with an amount of strength sufficient to crack the circular fibres of the cervix, audibly sometimes. This is rough treatment, but it is done under anæsthetic influence, and the patient is said only to suffer from internal soreness for two or three days, whereas Dr. Goodell reports that the cervical canal does not return to its previously angular or contracted condition. The plasma thrown out by the interstitial rupture of the cervical tissues thickens and stiffens them, and the cervix is said to become shorter and wider, and anteflexion and retroflexion to be cured. It would be surely worth while for some of our young hospital men to try this plan of treatment, instead of wasting their time in devising new pessaries. It has been also proposed to strengthen the cervix by electricity. Most men think a stem-pessary made of zinc and copper does no more good than a similar one made of vulcanite, but, with others, I believe the double metal acts by its electricity, or why should it so speedily wear out. Tripier advises a doubtful plan of treatment to cure retroflexion, for instance, he proposes to distend the rectum by an air-pessary, and then to put the negative pole inside the cervix and the positive into the bladder.

It has been supposed that in some cases of retroflexion there was a state of active contraction of the muscular tissues at the point of flexion. and the cervix has been divided by the hysterotome, up to the internal os; and it is affirmed that without other treatment than two months' rest, the womb resumed its right place and the patient was able to return to her work. This practice has not gained favor in America, at least, Dr. Marion Sims has lately stated that he never performed hysterotomy for retroflexion, and in writing to me, my friend Dr. Emmet, who was the colleague of Dr. M. Sims, at the Women's Hospital of New York, says, "I have never made the lateral incision more than a half-a-dozen times in my life, for flexure of the womb, and I could never understand how a flexure, existing above the vaginal junction, could in any way be relieved by the operation. On the contrary, if any case comes under my care when this operation has been performed, I freshen the sides of the two

flaps and unite them with silver sutures. Formerly I used to divide the anterior lip in cases of retroflexion, but seldom do it now, as perimetritis exists in so large a number of cases that I prefer to trust to general treatment, hot water vaginal injections, and frequent blisters to the neck of the womb. In cases of flexion, I only divide the posterior lip backward after I have tried other means, and then only with the view of being better able to treat the endometritis, that always exists in such cases."

There have been men, who while advising a shower-bath, have not objected to an umbrella being used; so it is not to be wondered at that it should have been lately proposed to straighten a bent cervix by a flexible stem-pessary. It is, however, generally admitted, that if a permanently bent cervix is to be straightened by leaving a stem in its canal, that stem must be solid. The simplest stem-pessary should first be tried, which is the bulb-headed metallic pessary, made with a slightly bulging extremity to better ensure its retention by the cervix, and with a vaginal bulb smaller than is usually given to the instrument. After introducing this, or any other instrument into the womb, it is well to keep a patient on the sofa for a few days. If this instrument is well borne, but slips out, then I adopt Dr. Beatty's suggestion for the cure of retroversion, and I retain the pessary by means of a smooth boxwood oval pessary, which permits the free motion of the bulb over its surface, but prevents its escaping from the cervical canal. This should be worn for a couple of months, during which time dancing and riding should be avoided, and only a moderate amount of walking allowed. This is sometimes followed by actual cure, while at others little amendment is obtained, in which case, the treatment may be repeated. Supposing this simple contrivance so irritates the womb as to do more harm than good, then I withdraw it, and, when irritation has subsided, I try it again, and, if unsuccessfully, I apply fuming nitric acid to the cervical canal, to harden it and enable it to bear the contact of the pessary. Various expanding pessaries are to be found at the surgical-instrument makers, and their chief merit is that they do not drop out of the womb. The internal os often resents the strain of an ever-expanded spring, and it may cause great pain, or blood-loss, or inflammation. Some ten years ago, there was published a case of death, by metro-peritonitis, on the tenth day after Dr. Greenhalgh had introduced his pessary, which had been retained in spite of the severe pain it caused. The least dangerous of expanding pessaries is one sold as Dr. Chambers', but if Messrs. Coxeter rightly inform me, the only difference between Dr. Chambers' and the late Dr. Wright's pessary, is in its being terminated by a plate instead of a bulb. It is fair to note, that these instruments are more cautiously used and much less dangerous, than Simpson's original stem-pessary. That instrument has indirectly done good to some patients, by transforming chronic uterine inflammation into acute, which was then energetically

treated; or by the flooding that ensued; or by causing a limited amount of pelvi-peritonitis; or by modifying, beneficially, the abnormal sensitiveness of the womb, just as the passage of a sound cures neuralgia of the neck of the bladder; or as the bistoury cures some neuralgic affections of the anus.

Uterine Versions.—The variety of means invented to keep the womb in its right position, when it falls backward or forward from the failure of its natural supports, shows the difficulty of doing so. The mechanical ingenuity peculiar to our race has been intensified in our Transatlantic kinsfolk, and we get from America all our ideas for supporting the womb. Meigs' simple ring-pessary is still useful in prolapsus. Hodge compressed this ring and curved it, so that it might correct retroversion and anteversion, and, when once the womb has been replaced, it is sometimes possible to keep it in its right place by a well adjusted Hodge-pessary, which takes a firm "appui" on the symphysis of the pubes. Otherwise bent, Meigs' ring has become Dr. Graily Hewett's cradle-pessary, the Blackbee spring-pessary, and many others sold in the shops; but woe betide the patient of any man who thinks a shop can provide him with what will fit his patient. He might as well ask an instrument-maker for a biting- and talking-machine, and forthwith stick it into his patient's mouth, and expect him to bite and talk with comfort. Anything sold as tolerably suitable, has to be shaped and fashioned to fit, as far as possible, the peculiarities of the case, and there is nothing so difficult as to thus fit something to the womb, that effectually rectifies its false position, without damaging the uterine and adjacent tissues. Even if they are well borne they must be carefully looked after, for they may ulcerate the vagina or the womb without giving warning. Dr. M. Sims mentions having seen Hodge's lever-pessary dig holes in the anterior wall of the vagina, almost through, and into the bladder; he has also seen Dr. Meigs' ring-pessary cut a sulcus in the posterior cul-de-sac of the vagina, deep enough to burrow the finger in, and Dr. Hayes has seen a Hodge imbedded in the vaginal wall. The womb toward the fourth month of pregnancy is liable to complete retroversion, which so interferes with defecation and micturition, that it is imperative to replace it. In such a case it has been usual to place the patient on all fours, to introduce the right hand into the vagina, and, when pressure is properly applied, the womb often returns so suddenly to its right place, that the first impression is that something has gone wrong with the patient, until her comfort dispels the fear. In such cases, a few days of horizontal rest and the gradual growth of the womb will prevent the recurrence of the accident, without having recourse to pessaries. Dr. Campbell, of Georgia, advocates the use of air-pressure in the reposition and treatment of displacements of the uterus. He places the patient not in the "knee-elbow," but in the "knee and breast" posture. In this position

the breast rests on the couch, the knees are placed perpendicular to the same, and the spine allowed to become convex downward, which produces complete relaxation of the abdominal muscles. While the patient occupies this position he admits air into the vagina, and he thus easily replaces the uterus. This procedure can be borne in mind, as a plan to try in a difficult case. Dr. Galabin has attempted to extend to the treatment of anteversion the action of simple leverage, which Hodge's pessary exerts in retroversion. His pessary resembles a Hodge's pessary posteriorly, but the anterior arch is formed by a broad transverse arch, convex upward. This rests behind the pubes in front of the cervix, and pushes the fundus upward, while at the same time it stretches the anterior cul-de-sac upward, and so draws the cervix downward and forward. This pessary resembles Dr. Thomas's anteversion pessary.

A totally different system of uterine orthopædy has been invented by Dr. Cutter,[1] of Boston, and should be tried in our hospitals, for it has received the sanction of Dr. Gaillard Thomas, to whose work I refer the reader. I shall only state that Dr. Cutter gets his support from a belt of inelastic webbing, to which he attaches a suspensory cord of india-rubber tubing, which runs between the buttocks, and to the extremity of which is fastened the perineal end of his pessaries. The advantages claimed by Dr. Cutter for his plan of support are, that it rests on the sacrum, simply suspending the womb by an elastic contrivance, and that it perfectly fits round the perinæum, through the vulva, along the longitudinal axis of the vagina, and into the posterior vaginal cul-de-sac, so as to maintain the normal axis of the vagina, while exciting the contraction of its transverse muscular fibres.

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[1] On Uterine Versions and Flexions, second edition. Boston, 1876.

CHAPTER XII.

UTERINE COMPLICATIONS.

The complications of uterine disease are sometimes so painful, that it is difficult to convince a patient, suffering severely from the bladder or the rectum, that a disease of the womb is the main cause of these troublesome complaints; nevertheless, the close vicinity of the reproductive organs to the pelvic viscera, their important relations, and the painfulness and chronicity of many uterine affections, sufficiently explain their frequent complications to the medical mind. Those which I shall consider briefly are: 1st, inflammation of the adjoining portions of the reproductive apparatus; 2d, diseases of the breast; 3d, diseases of the bladder; 4th, gastro-intestinal disorders.

Clitoris.—Of its occasionally baneful influence, of its possibly becoming too large, and of the narrow limits within which clitoridectomy is justifiable, has been written of at page 91.

Pruritus.—This may affect the vagina, the labia, the clitoris, the anus, or all alike; and the inexperienced practitioner has no conception of the amount of misery caused by this complaint. It rather depends upon the susceptibility of the patient's nervous system than upon any peculiar form of inflammation, which may exist independently of it, or may accompany all its varieties. Pruritus may be met with when there is no local congestion, but my worst cases were allied to chronic and slight uterine irritation, as in a single lady of fifty years of age, in whom it is brought on by the slightest fatigue or worry, often wakes her, resists the application of remedies, and makes her pass the remainder of the night in pacing the room. It was increased by having to sleep for years in a hot bedroom, while nursing her mother, for, when she died, my patient was able to take care of herself, and got better. Here the pruritus was caused by hyperæsthesia of the entire nervous system, for the hands or other parts of the body had sometimes the same kind of pruritus, and all intercurrent ailments were attended by great increase of skin irritation. Vaginal injections, with a solution of nitrate of silver, only relieved her. When the distress is bearable, she prevents its increase by resting with her feet high up—*more Americano*—by cold-water injections, or water containing a teaspoonful of borax and a tablespoonful of glycerine to the pint, or two or three tablespoonfuls of the *liquor*

carbonis detergens to the pint, and by belladonna suppositories placed in the rectum. Syrup of citrate of quinine has often done her good. It is now nineteen years since I have watched this patient, and she still suffers from pruritus, though much less. I have already stated my belief that, in the frightful cases of onanism related by Tissot and others, its real cause would have been found in uterine disease, if the means of detecting it had been then available. It is obviously indicated, when it is a question of pruritus of the sexual organs, to pursue inflammation, wherever found lurking in the reproductive apparatus, by leeches and by the injections pointed out as useful for vaginitis. Pruritus vaginæ may be a distressing symptom of uterine cancer, and on two separate occasions, in the same patient, a vaginal belladonna suppository caused most distressing pruritus in the vagina. The injection of a solution of nitrate of silver into the vagina two or three times a week is often successful. A zinc and hydrocyanic acid lotion and injection have often been useful, and likewise an injection of a solution of tincture of iron, or of one part of carbolic acid to fifty of water. A solution of nitrate of alumina, six grains to the ounce, is also good, both as a wash and as an injection.

Follicular Inflammation of the Vulva.—This is also a frequent complication, sometimes receiving exclusive medical attention, yet maintaining its ground for years, notwithstanding varied local treatment, should the practitioner ignore the uterine inflammation in which it originated, and by which it is fostered. Notwithstanding the most judicious surgical treatment of uterine disease, follicular inflammation of the labia will occasionally arise in the course of the treatment, and will require great cleanliness, not easily attained; for I have often found in bad cases that the deeper portions of the labial depressions were covered by sebaceous secretions, although the patient washed several times a day. The most diseased parts were, on that account, hardly touched, and the lotion or ointment, not coming in contact with the diseased tissues, did no good. One or two warm or tepid hip-baths every day are very useful in such cases, for the water will soften the concretions, so that the patient can remove them by the impulse of the water, or by the gentle application of the finger. Careful and frequent washing with a tepid emollient fluid, milk and water, linseed-tea, or poppy-head decoction, and the application of cold cream after each ablution will be sometimes sufficient. Lotions with borax, chlorate of potash, acetate of lead, sulphate of zinc, alum-iron, or carbolic acid, to each of which laudanum or hydrocyanic acid can be added, are often necessary, and their efficacy is increased by steeping a piece of old linen in one of these, and applying it carefully, so as to make it fit into the labial depressions; but as the patient must do this herself, it is seldom well done.

When the careful application of these remedies is found to be unavailing, it may be concluded that the irritation is kept up by the "Pediculus

ferox," or the "Trichomonas vulvæ," or by cryptogams, like the "Leptothrix vaginalis," or the "Oidium Albicans." Then a saturated solution of perchloride of iron in glycerine has been found a useful application, or a strong solution of carbolic acid carefully applied by the surgeon. Mercury has long been praised in such cases by Plenk and by Trousseau. A good plan is to order an injection to be made into the vagina, first twice, and then once a day, with a solution of bichloride of mercury, one drachm to the ounce, the liquid being also used as a wash to the vulva. An infusion of a drachm of tobacco in a pint of water has been recommended under similar circumstances. When the case has lasted for long years, and both the skin and the mucous membrane of the labia look like withered, bluish white parchment, there is nothing like nitrate of silver, applied as directed at page 140. I have thus sometimes speedily improved a state of things that had lasted for many years, but in one case it took three months to get rid of the sensation of fire running under the skin, which greatly interfered with sleep. In this case, whatever part of the body was scratched, there came an angry lump. Her gums were sore, distilling pus round a lot of rickety stumps, so I sent her to a dentist, to give her a chance of making good blood. First she had effervescing draughts and then quinine; she was ordered a warm bath once a week, a cold sitz-bath at night; for lotion, a solution of opium and acetate of lead; but the real means of health recovery was the swabbing of the diseased pudenda, twice a week, with a solution of nitrate of silver.

Eczema Genitale.—This is a frequent complaint of fat women of mature age with gouty antecedents, or whose health has long been bad; so it should be looked upon as the local expression of a constitutional taint, sometimes made evident by the presence of sugar in the urine, as already observed by Trousseau and Dr. Braxton Hicks. This is a very troublesome ailment, even when it is limited to the skin, but it generally passes to the mucous membrane, and even to the vagina, either by right of continuity of tissue, or else by the running of morbid secretions from the cutaneous to the mucous sides of the labia, in the same way that, in coryza, the nasal secretion inflames the subjacent skin. Three drachms of trisnitrate of bismuth, suspended in half a pint of water, thickened by tragacanthe mucilage, is useful, as a lotion and as an injection, or one of the following lotions: ℞. Zinci oxidi, calaminæ, sing. ʒ ij.; acid. hydrocyan. dil., glycerini, sing. fl. ʒ ij.; liq. calcis ad. fl. ℥ viii. Or, ℞. Zinci oxidi ʒ j.; glycerini puri, aquæ calcis, sing. ℥ j., tere zinci oxidum cum glycerino, et adde aquam calcis. These lotions are to be applied several times a day. They may be alike applied to the skin and to the mucous membrane if it be affected, but collodion flexile is only available for the skin, and it has done good service to Dr. Lawson, when freely applied to the eczematous skin. Whenever ointments are prescribed, no other excipient should be ordered than vaseline. It will be obvious that, while thus at-

tending to the distressing local mischief, gout, diabetes, and any other constitutional taint has to be met. I have occasionally observed repeated crops of boils in the labia of those who have long suffered from uterine disease: hip-baths and emollient topics often suffice, but I have sometimes been obliged to open them freely with the lancet, in which case the bleeding prevents their recurrence; the distress they occasion is out of all proportion to their danger.

Vegetations, etc.—Fuming nitric acid is a good caustic for vegetations and warts that form on the labia. Their removal by curved scissors and the touching their seat of growth with the acid nitrate of mercury is my plan, and the application to them of crystallized acetic acid is said to remove them without pain.

The Vulvo-Vaginal Glands.—They become inflamed so seldom, that I have not had a case for fifteen years. When inflamed, the canals through which their secretion passes to the vulva become obliterated, a more or less distinctly defined and round hardness, of about the size of a walnut, will be found in one or in both labia: it may be either a cyst or an abscess, but in either case it is useless to waste time with the external use of iodine, for the cyst should be punctured, and injected with a concentrated solution of the tincture of iodine. I think it, however, best to open these abscesses freely with the bistoury, on the mucous surface of the labia, and to touch the edges of the wound with nitrate of silver. It will be necessary to inject the cavity with a solution of nitrate of silver, or of tincture of iodine, every other day, to prevent the premature healing of the lips of the wound.

Vaginitis.—Had I not exceeded appointed limits, I should have made a more accurate study of the vagina in itself, and its relation to the pelvic viscera. The anatomy of the vagina in the virgin, pregnant, and post-partum state, would have shown that there is such a thing as defective vaginal involution, and that, as I have already hinted, this unnoticed condition is accountable for many uterine displacements. Perturbations in the nervous endowment of the vagina explain vaginismus and other kindred imperfections. Vaginitis would have been more fully considered than has hitherto been done, in its simplicity, or as complicated by various specific poisons. Contraction or relaxation of the vagina would have been given as sequelæ of vaginitis, although the latter condition may be observed in those who have neither had children nor vaginitis. The traumatic lesions of the vagina would have received due attention, but the limited scope of this work only allows of my hinting at some of these subjects.

When acute, vaginitis is best treated by warm hip-baths, injections with linseed-tea or a decoction of poppy-heads, by perfect rest, and effervescing draughts. When less acute, injections with a solution of borax, of chlorate of potash, or of acetate of lead are useful. Then an attempt

may be made to expedite recovery by injections with a solution of alum and zinc, or of tannin, or by a tannin vaginal suppository at night. The complaint might be shortened by injecting a solution of nitrate of silver into the vagina, as described at page 139. If the mucous membrane be ulcerated, the surface may require to be once touched with acid nitrate of mercury, or to be well brushed over with the nitrate of mercury ointment every other day.

Vaginal Contraction.—Dr. Daniel[1] relates, that in one West African tribe, when a young woman permits illicit connection, it is customary to hand her over to the matrons of the community, who stuff the vagina with a pulp made of the unripe pods of the capsicum frutescens. The super-acute vaginitis thus induced is followed by so contracted a state of the vagina, that intromission is henceforth prevented. Something similar may occur after acute vaginitis, and there are cases recorded of not very severe vaginitis being followed by such an amount of vaginal contraction that it was necessary to notch the unyielding ring to facilitate labor, otherwise the vagina would have been lacerated. The occlusion has been complete through the whole length of the cervix, and nevertheless the skilful surgeon may tunnel through it, and thus re-establish a channel for the menstrual flow, a way for conception, and for the safe delivery of a full-grown child.

Vaginal Relaxation.—Chronic vaginal irritation, set up or prolonged by uterine disease and by chronic dysmenorrhœa, causing more or less liability to vaginal discharges, may considerably relax and enlarge the vagina; but a considerable and permanent enlargement of the upper part of the vagina depends on its defective involution after one or more pregnancies. I have had cases in which the womb was merely congested, little out of place, and was found easily movable in an enormously distended vaginal pouch; this completely unsupported state of the womb accounting for abdominal sinking and distress, back pain, and inability to walk. In such cases, the change is to be rung on the best astringents, and plugging the vagina with gradually decreasing amount of marine oakum might contract the vagina. A well-made elastic bandage with an air-pad, or Hull's bandage, would be useful. Tonics are indispensable, and ergot worth trying.

Vaginal Prolapse.—The wife of a clergyman, who never had children, and who had suffered a good deal from chronic uterine inflammation some ten years previous, when about fifty, and after the change of life, wrote to say she suffered much from the womb coming down. I sent her a moderate size oval boxwood-pessary, but she could not bear it, and the astringent injections did not relieve the great pain and distress she felt in walking. When I was able to examine her, I found the womb high up and

[1] Native Diseases of the Gulf of Guinea. London, 1849.

the vagina rather capacious. I then told her to come to me after having walked, and when she feft in trouble, and I found a fold of the vagina descending half an inch below the labia. A perineal pad, attached to a firm hypogastric belt, has enabled this lady to get about very comfortably for the last nine years, and she takes off the bandage when dressing for dinner, after a hard day's parish work. In this case there is a constitutional liability to relaxed mucous membranes, and sometimes the bowel comes down.

Vaginal Cyst.—Having to treat another clergyman's wife for uterine disease, I became aware that, along the upper part of the vagina, and in a line with it, there projected something that might be described as about half the size and shape of a little finger, cut longitudinally. It gave no pain, and, as fluctuation was clear, I opened it in its whole length with the assistance of Mr. Curgenven, and there came out a transparent, glutinous, and colorless liquid. When I examined a fortnight afterward, there was no trace left of the little cyst. Dr. Noel Guéneau de Mussy has described a similar cyst, and they were both due to the obliteration of a mucous follicle.

Hypertrophic Elongation of Cervix.—The body of the womb may be in its right place, the vaginal cul-de-sacs may have their proper depth, yet the os uteri projects from the vulva. If the uterine sound penetrates easily from four to six inches, there must be an unnatural elongation of the cervix, and the elongation generally depends on that of its supra-vaginal portion. This is frequently congenital, but it may be caused by puerperal metritis checking the involution of the uterine tissues, and thereby determining an hypertrophic elongation of the cervix; and abortion produces the same results. I have several times met with very considerable elongation of one lip only of the os uteri. If the patient be single, so long as it is possible to retain the cervix, and to prevent its projection between the labia, no operation should be countenanced by the medical adviser; neither would I do so if the patients were old and the inconvenience susceptible of being made bearable by a perineal pad. Should this infirmity occur in a young woman, and prevent her earning a living; should it lead to matrimonial disunion, by being both an impediment to connection and a cause of sterility, then the removal of this *infra-vaginal* portion of the cervix is justifiable, as described by Dr. M. Sims. "When a patient was fully etherized and ready for the operation, it was reported that the ecraseur was broken; so I had no choice but to amputate with scissors. I intended to leave the stump to heal over in the usual way by the granulating process, which would take three or four weeks; but, while examining the wound, and waiting for the bleeding to cease, the idea all at once occurred to me to cover over the cut surface with vaginal mucous membrane, just as we cover over the stump of an amputated arm or leg by skin, after the circular method.

Four silver sutures, two on each side of the canal of the cervix, passed antero-posteriorly through the cut edges of the vagina, drew this membrane over the stump, covering it completely, but leaving an oval opening in the centre, to correspond with that of the cervical canal. The parts united by the first intention, just as in a vesico-vaginal fistula; the wires were removed in eight or nine days; and the patient was soon on her way home, not having suffered the least inconvenience from the operation."

If the case be one of considerable elongation of one lip of the vaginal portion of the cervix, its amputation may be considered a safe operation, but in two cases I have imitated Montgomery, and removed the redundant tissues by potassa caustica. Judging from Huguier's experience, the cases which would justify amputation are those in which the supra-vaginal portion of the cervix is elongated, but it is then necessary to separate the cervix from the bladder by careful dissection, which endangers the perforation of the peritoneal cul-de-sacs, and might bring on fatal peritonitis; for these reasons, the operation must be reserved for very exceptional cases.

Uterine Polypi.—Mucous polypi can be crushed or twisted off, and the seat of growth should be well swabbed with nitric acid, for it is usually diseased, even if it be not the seed-nest of other mucous polypi. Fibrous polypi should be removed with the ecraseur, or cut away, for tying them is more likely to lead to pyæmia. For operating on large polypi, it is best to put the patient in the quadrupedal position, to seize the polypus by means of a volsellum with the left hand, to bring it gradually in view, and cut the pedicle with curved scissors held in the right hand.

Fibroid Degenerescence of the Womb.—I have seen five cases in which the uterus was converted into a hard, regularly defined body, about the size and shape of an ostrich egg, or larger—three of the patients were virgins. One was brought to me by Mr. John Harrison, of Chester, and he tells me that the enlargement subsided after a long-continued course of iodine. Another patient suffered much for years, from flooding and muco-purulent discharge, and was no better when I last saw her. I first saw another patient in 1858, and she had been suffering for ten years from menorrhagia, muco-purulent vaginal discharge, great abdominal pain, and dysuria, sometimes requiring the use of the catheter. There had been no suspicion of more than functional uterine disease, until I found the hard, enlarged womb with a small, soft, tender, and ulcerated cervix. Dysuria was then so great as to disturb the patient some twenty times at night. My treatment abated many of the disagreeable symptoms, and enabled her to moderately enjoy life for the two following years. Dissatisfied, however, that I would not attempt to cure her by an operation, she consulted Mr. Baker Brown, who professed himself

ready to do so; fortunately for her, she first went to Dr. Oldham, who most judiciously discountenanced, as unwarrantable, any operation whatever. He advised tonics, which was judicious; the application of Kreuznach brine to the abdomen, which could have no effect on a cartilaginous womb, but he forbade medicated vaginal injections. The result was more frequent flooding and vaginal discharges, and when she again placed herself under my care, after an interval of eighteen months, I found the womb twice as large as when I had last seen her, and the cervix and vagina subacutely inflamed. This lady's life has been since passed in getting better by rest and treatment than doing too much, and thereby bringing on terrific flooding. I have not seen her for many years, but although the womb has increased in size, her general health has been better, and it will be noticed that this case has lasted twenty years at least.

The fourth patient, when forty, had been long married without conceiving, and had frequently been at death's door from flooding, the blood coming from the inside of the enlarged body of the womb, for the cervix was quite healthy and was reduced to a mere stump. This was observed in all five cases, when the cervix was not completely effaced. I restrained blood-loss by ergot and digitalis, but I have long lost sight of this patient. My fifth case is that of a married lady of forty-seven, who, after the birth of her only child, some eight years ago, was examined and told the womb was not right, and since then has not been strong. After overtaxing her strength, in the summer of 1875, she began to lose blood daily, to a moderate amount for a month, then for three weeks to an alarming extent, and occasionally there was a considerable amount of an inoffensive watery discharge. I found a short and small cervix tacked on to a very hard, regularly shaped body of the womb, larger than an ostrich egg, which had not caused the least pain or disturbance to the bladder or to the bowels. Although it was clear the blood came from the cavity of the body, still, as the inside of the cervix was ulcerated, I touched it with the acid nitrate of mercury. I ordered ergot in large doses, alum and zinc injections, and strongly recommended rest and moderation in everything. When, fifteen months afterward, I saw this lady, I found the womb still larger and the cervix nearly effaced, otherwise the treatment had been surprisingly effectual, for, notwithstanding the habitual commission of all sorts of imprudences, she had no flooding for fifteen months, then menorrhagia at three successive menstrual periods, and the watery discharges between times. It is a toss-up what the change of life will do for this patient. I have outlined these cases, for I do not think this form of disease has been written about, and it was my wish to try intra-uterine treatment in the third, fourth, and fifth cases.

Fibroids.—Even bad cases can be greatly improved by judicious hygiene, particularly at and about menstrual periods, by saline purga-

tives, and by the application to the cervix of two or three leeches, just before menstruation. Even on the score of ergot being a capital hæmostatic, it is worth while trying Hildebrandt's treatment by the subcutaneous injection of ergotin, when the consistence of the tumor is that of an elastic fibroma rich in muscular tissue, when its seat is sub-mucous, when the walls of the uterus are healthy and capable of contraction, and when there has been no inflammation in the vicinity of the womb. It appears we are warranted in believing that moderate doses of ergot, as one-half drachm doses of the fluid extract given hypodermically, two or three times a day, are often sufficient to cause a gradual disappearance of the tumor, and this quantity should not be exceeded in the treatment of large multinuclear tumors. When we desire to cause the expulsion or gangrenous disintegration of a tumor, we must use large quantities, and continuously, until this effect results.

Those who object to subcutaneous injection, may take the ergot in the usual way. The Americans have extensively tried the plan with a certain amount of success. Some give thirty drops of the fluid extract three or a four times a day. Others use a drachm, once or twice in twenty-four hours. Perhaps it is most efficacious in large and less frequent doses. This preparation is offensive, and occasionally cannot be borne, which cannot be said of Squibb's solid extract, which may be given in pills; five grains equal twenty grains of crude ergot, and may be given two or three times a day. Dr. White uses a suppository of fifteen grains of solid extract. The addition of belladonna gave excellent results in the practice of Dr. Goodrich. Ergot often relieves obstinate constipation, and improves the appetite, but some have seen it produce vertigo, imperfect control of the extremities, and slight spasms of the flexors of the forearm. Allan reports phlebitis as having occurred, the limb resembling phlegmasia alba dolens. Indigestion and constipation can be corrected by tonics, laxatives, and stimulants, given simultaneously with the ergot. The ergot may cause disintegration and absorption, by interrupting the nutrition of the tumor; decomposition then occurs within the capsule, and the putrid mass has to be expelled. This is accompanied by inflammatory symptoms and more or less toxæmia. The tumor has to be expelled from the cavity of the uterus, with greater or less inversion of the womb, and it often cannot be done without great suffering, and even peril, from this gangrenous disintegration and the pain of expulsion. Ergot does not always act at once, but appears to be cumulative, suddenly causing violent and prolonged contractions. Opium and chloral may then become necessary. Sometimes, and more particularly after the change of life, fibroids decrease, harden, and become more or less calcified, and Dr. McClintock has imitated this natural mode of cure by giving chloride of calcium. I follow his example, and give ten grains of the medicine twice a day; its administration must be watched, for its long-

continued exhibition in young subjects has been known to cause arcus senilis and other evidences of arterial degeneration.

With regard to surgical measures, the knife has been judiciously used to cut up to, or through, small fibroids that obstructed the cervical canal. When the tumors are large, the patient in good health, and full of courage, it is fair to attempt the enucleation of the fibroid, but the surgeon who ventures on so bold a course should remember that fibroids sometimes cause the softening and thinning of that portion of the uterus on which they press, and that an operation under such circumstances must lead to perforation and death. With this proviso, I am inclined to agree with Dr. Meadows, that patience, perseverance, discretion, and a good use of our fingers, will enable us to accomplish a great deal more for the cure of cases of this kind than has been hitherto generally admitted.

Uterine Inflammation as a Complication of Other Diseases.—When we find a large ovarian tumor or a voluminous fibroid, our diagnosis may not be perfect, for if these diseases are accompanied by severe backache and by muco-purulent vaginal secretions, we should ascertain whether the principal complaint be not complicated by inflammation of the womb and of the vagina; and, on directing treatment accordingly, I have sometimes removed the severe pain attending ovarian tumors and large fibroids. The same course should be followed when uterine inflammation is kept alive by small fibroids, that cannot be dispelled by iodine or removed by the knife. In seven patients, repeated relapses of uterine inflammation were explained by my discovering, after long attendance, a fibroid of the size of a cob-nut, springing from one or the other side of the womb at the junction of the cervix and fundus. I believe such cases more frequent than is generally admitted. With regard to the treatment of these tumors, I have checked their growth by keeping in check uterine inflammation, but I have never caused them to disappear totally. Twice I have known a fibroid, of the size of a large hen's egg, developed on the anterior surface of the womb, disappear of itself, and the same circumstance has been noted by other observers.

Ovaritis.—Although divided into distinct portions for special purposes, the reproductive canal should be considered as pathologically *one* from the ovary to the vulva, as it is *one*, anatomically, in most of the lower animals. As a natural result of the solidarity that unites the different portions of the reproductive apparatus, any serious inflammatory lesion of one portion of it endangers the health of that which is situated above and below the part diseased. In another work,[1] I have demonstrated that the ovaries hold the same sovereign sway in pathology as in physiology, and that many cases of uterine congestion and inflammation were caused or aggravated by subacute ovaritis. What I taught in 1850

[1] Ovarian and Uterine Inflammation, third edition.

has been accepted by Dr. Mathews Duncan, by Dr. Gibbs, Dr. Gaillard Thomas, and by many French pathologists. The assertion that subacute and chronic ovaritis has often a vast field of morbid influence, has been lately confirmed by the diseased state in which the ovaries were found by various American surgeons, who have removed them to cure epilepsy, to prevent insanity, and to check the flooding of uterine fibroids.

Ovaritis is much more frequently a cause of uterine disease than its result, although it has been known to follow idiopathic and blennorrhagic diseases of the womb. Deeply seated in the pelvis, the ovaries almost escape from direct treatment. Leeching the womb is the best way to relieve the congested ovaries, particularly when the menstrual flow has lessened. Blisters and ointments to the hypogastric regions, and baths, only act on the ovaries indirectly; tonics and sedatives have a more direct action; but an excellent way of treating subacute affections of the ovary, is to maintain the womb in the healthiest possible condition; a fact that has, doubtless, misled some pathologists to ascribe almost every feminine ailment to inflammation and ulceration of the cervix. Whenever subacute ovaritis suppresses, partly or completely, the menstrual flow, the best and quickest way of curing the tedious complaint is to apply four leeches to the cervix a day or two after the flow has ceased. The effect is sometimes well marked, as in the following sketch. A lady of average strength, twenty-two years of age, has been always subject to dysmenorrhœa, and had already been married two years without sign of a family, when she consulted me. I found nothing amiss but a conical cervix, and although I only notched it bilaterally, to a depth of three-quarters of an inch, that completely cured dysmenorrhœa, without however enabling her to conceive. She led a most active life of pleasure for five years without a day's illness, but then checked the menstrual flow by stopping too long in a cold church in wet weather, and by getting wet through. Then came a muco-purulent vaginal discharge, occasional back pain, fixed pain in the left ovarian region, neuralgia of the crural and ischiatic nerves, so that she could not walk nor even sit comfortably. She laid most stress upon these last troublesome symptoms, so the general practitioner in attendance ordered liniments and plasters, but ineffectually, and he advised her to consult an eminent surgeon, who sent her a woman to shampoo and to rub the limbs every day. This was uselessly done for a fortnight, and the lady was then sent to an eminent physician, who felt her pulse, looked at her tongue, and gave her a very good purgative pill. Fortunately the summer exodus took her to a French watering-place, where an English doctor, who saw that the limb-pain was the reflex expression of disease of the reproductive organs, applied caustic to the cervix, and improved her condition, but being still a sufferer, on returning to town she at last thought of me. I found uterine congestion and irritation depending on subacute ovaritis. Although I

could not identify the left ovary by the finger, it was evidently the centre of the pain and of the fulness and tension of its surrounding tissues.

Habitual ovarian pain, and ill-defined pain in the whole left limb, only allowed her to hobble about, and there was nausea, debility, and sleeplessness. All these symptoms were worse at menstrual periods, which, instead of being profuse for six days, only lasted two days, and were scanty. The treatment prescribed was done at random, with the exception of a daily vaginal injection, a warm hip-bath on going to bed, and a hot poultice at night with laudanum. Twice the patient was getting better, when she made herself worse by checking the menstrual flow. After the first relapse I put eight leeches over the ovarian region, with little effect, and after the second, that is, immediately after an ineffective menstrual discharge, I applied four leeches to the womb. She was much worse for two days, and then got rapidly better, so she immediately left off all treatment and, nevertheless, continued to improve, had an abundant flow at the two following periods, and was able to bear up well against the fatigue and anxieties of a husband's illness. During the following three months she suffered much less, and gradually got well, and she has remained well for a year, though taking precious little care of herself.

If subacute ovaritis meets with a womb with strong morbid proclivities; if both are associated with a nervous system predisposed to disease; if subacute ovaritis has lasted many years, and has ended in cystic degeneration of the ovary, attended by the ruin of bodily health, epileptic attacks, or insanity; when, in fact, the case is incurable, is there nothing more to be done? Hitherto it has been the custom, while watching the case, to give palliatives, and to hope in the change of life. Emboldened by the success of ovariotomy, American surgeons have lately come to the conclusion that it is best to bring on the change of life by the removal of the ovaries, when their irremediable disease compromises life or sanity of mind.[1] I admit their conduct to be judicious, provided ovariotomy be only resorted to after a long lapse of time has shown the ineffectuality of the ordinary modes of treatment to save life and to prevent insanity. When, however, it is a question of sterilizing a woman who might still some day wish to be a mother, her consent to ovariotomy is not sufficient; she should have well weighed its consequences, and have repeatedly asked for the operation. There seem to have been no errors of diagnosis made in the thirty cases in which this kind of ovariotomy has been performed by Dr. Battey, Dr. M. Sims, Dr. Peaslee, Dr. G. Thomas, and Dr. Trenholme. The ovaries have been found enlarged to twice or more than their usual size, greatly congested, often in a state of cystic degeneration, and breaking up when it was attempted to bring them down through the va-

[1] Dr. Battey: Transactions of the American Gynecological Society, vol. i.; Dr. Marion Sims: British Medical Journal, December, 1877.

gina. The ovaries have been so frequently found embedded in old false membranes, that it seems preferable to operate by abdominal section.

The percentage of perfect cure is very small, but one of Dr. Battey's operations was followed by the recovery of health and the cure of epilepsy. Another operation stopped the flooding caused by uterine fibroids, and Dr. Trenholme successfully resorted to ovariotomy for that distinct object. Some patients who have well recovered from the operation, have continued to suffer just as much as before, but in several of these cases only one ovary was removed, and it seems pretty well established that both ovaries should be removed, even if one be painless.

Pelvi-Peritonitis.—This Nemesis of rash pelvic surgery should never be out of the gynecologist's mind. The post-mortem examinations related in the works of Aran, Bernutz, and many recent writers, amply confirm my statements relative to the frequency of pelvi-peritonitis in connection with ovulation and inflammation of the ovary and of the womb. This caution will insure the rest which offers the main chance for the patient's well-doing; leeches, poultices, and mercurial inunctions may be required to prevent the case degenerating into one of those rare and distressing instances of disease in which menstruation is sometimes followed by an abscess in the vicinity of the ovary, which may be abortive and subside after a time, or the abscess will open, after about ten days, into the bowel, or, after a longer time and greater pain, into the vagina. Pelvi-peritonitis may maim a woman for life, by gluing together organs that should be free. Adhesions left by iritis, and impeding the mobility of the iris, are apt to excite fresh attacks of iritis. Dr. Wharton Hood has used these facts to explain the effects of internal adhesions in maintaining pain and tenderness, and in producing recurrent inflammation in many of the large articulations. He has very clearly shown that the remedial effect of the rupture of such adhesions is precisely analogous to the remedial effects of iridectomy or of corelysis in the secondary inflammations of the iris. Unfortunately, pelvic adhesions cannot be safely broken through, except by pregnancy.

Mammary Complications.—Though the breasts are far removed from the womb, they participate so largely in the venereal orgasm, that their intimate pathological relationship might be inferred. More or less intense pain of the breasts is a frequent complication of uterine inflammation, more particularly when the body of the womb is affected; occasionally mammary tenesmus is felt, or the breasts ache, burn, or are swollen, sometimes secreting mucous or milky fluid, and repeatedly discharging a muco-lacteal secretion at the menstrual periods. In a case of chronic internal metritis, the breasts were so enormously swollen, hot, tense, and glistening, that I feared abscesses, particularly in the right breast, where there had been one fifteen years before. In a single lady, thirty years of age, suffering from an inflamed retroflexed womb, the

left breast frequently discharged from the nipple a glutinous fluid, sometimes tinged with blood. The left breast did not differ from the right, and both were cool and flabby. A clergyman's wife, at the change of life, was annoyed every month by a considerable amount of exudation of reddish water from both nipples, lasting several days. As there was no pain or swelling, she only knew of it by the appearance of her linen. The avoidance of pressure from ill-made stays, the application of cotton-wool to the breasts, and anointing them with camphorated liniment, will be found beneficial; but the most powerful remedy is belladonna, and the best way of using it, is to freely apply to the breast glycerine ointment, containing three or four grains of sulphate of atropia to the ounce; with this may be associated the internal exhibition of the bromide or of the iodide of potassium.

In several cases, during the course of chronic uterine inflammation, patients were much distressed by discovering several lobular indurations in the substance of one breast, which was larger than the other, but not painful. These indurations were not, however, new formations; they gradually diminished, and never turned to cancer. Acute hypertrophy of both mammæ has been caused by ovaritis, and chronic ovarian and uterine inflammation will sometimes aggravate mammary tumors, cancerous, fibroid, or amyloid. I never met with a more distressing case of this kind than in a patient, twenty-five years old, who is stout, but cachectic; the last child of a very nervous mother, and of a very gouty father. She was fifteen when I was first consulted, on account of a tumor, the size of a pigeon's egg, in the right breast, which was first perceived soon after menstruation was established. This has always been too painful, scanty, and accompanied by great pain, and some swelling of the breast during the previous week. Mr. Bagshaw, of Bath, attended her, when about twenty, for ulceration of the womb, and since then the womb and ovaries have never been free from pain, irritation, or congestion, and the tumor became larger, for a time, whenever the womb was worse. After remaining comparatively dormant for twelve years, inflammation set in without appreciable cause, the tumor became very red, hot, and voluminous, so it was removed by Sir W. Fergusson in 1866. The recovery was good; but six months afterward menstruation ceased, the womb inflamed, and a second painful lump appeared in the place of the former, which rapidly grew to the weight of twelve pounds, and it was removed in 1867. This lady has remained an invalid, but there has been no return of mammary disease.

Irritable Tumor of the Urethra.—These tumors are analogous to hemorrhoids, and do not often complicate uterine affections; but they have been unusually distressing to some of my patients, who have been exceptionally severe sufferers from various forms of uterine inflammation. An intelligent friend, who had repeatedly well removed this kind of tu-

mor, once forgot to forcibly press back the thighs on the abdomen before operating, and thus made a bungle of the operation. When moderate in size, I touch the irritable tumor with fuming nitric acid, and the pain will be relieved by sitting afterward in cold water. When larger, I draw it out with the forceps, cut it off with curved scissors, and check the bleeding with perchloride of iron, if it be too considerable. There are cases on record in which various other caustics having been unsuccessfully applied, recourse has been had at last to the actual cautery, which is preferred by Dr. West. Some years ago, I assisted Dr. H. Bennet to cut out a tumor about the size of a large pea from the urethra of a lady over fifty, and she was afterward left under my care. She lost very little blood, but, nevertheless, got very weak, and although I had to draw the water twice a day, it was only on the fourth day after the operation that it struck me that the urine contained a large quantity of blood. Then I saw that blood was oozing out of the cut mucous membrane, and trickled down into the bladder, because the patient was always on her back. I freely applied perchloride of iron to the inside of the urethra, by means of a little ball of cotton-wool and the speculum forceps. There was a good deal of pain for a few hours, but the bleeding stopped.

Urethrocele.—This extremely rare complaint proved extremely inconvenient to a married lady, thirty-one years of age, and she applied to M. Gillette. She complained that in the erect posture urine would frequently escape, as also during coitus. On introducing the finger into the vagina, a bulging was immediately felt, and the end of the female catheter introduced for a short distance into the urethra could easily be felt in the sac. M. Gillette thought that he might control the bulging by dissecting off a piece of the mucous membrane of the vagina covering it, and bringing the edges of the solution of continuity together. The vaginal mucous membrane was removed without opening the urethra; but Dr. Gillette doubts the permanency of the cure.

Inflammation of the Urethra.—When the difficulty or inability to pass water is not removed by diluents, warm hip-baths, and poultices to the abdomen, I have found it depend on inflammation of the urethra, which can be felt to be round, solid, and enlarged to twice its usual size, and very painful when touched with the finger. In this case cooling injections are requisite, and linseed-tea, or some other cooling drink should be continued. It may, however, be necessary to introduce a tannin bougie, three or four times, at five days' interval, into the urethra. Tannin bougies are made by dipping medium-sized bougies into gum-water, powdering them with tannin, letting them dry, and, after rubbing off the asperities, dipping them in gum-water previous to using them, and if these measures are ineffectual, a stick of nitrate of silver may be rapidly passed into the passage. I have seen a small abscess form in the areolar tissue surrounding the urethra, and discharge a teaspoonful of matter after giv-

ing great pain: this occurred three times to the same patient, during a long course of chronic uterine inflammation.

Irritable Bladder.—To a moderate amount this is a very frequent attendant on all kinds of ovario-uterine disease, but it may be met with, independent of any organic disease, in highly nervous or hysterical women. The urine should always be examined, to know if the irritation depends on saline deposits in urine mixed with mucus. To understand the rationale of the vesical and rectal disturbance caused by uterine inflammation, we must remember how the womb is placed between the bladder and the rectum. The inflamed womb may act in the same way on both organs, congesting or irritating them so, that they may be spasmodically closed, or seized with an uncontrollable desire to eject their contents: for the womb, the anus, and the neck of the bladder are alike subject to this impulse; and tenesmus, arising in one of these orifices, often spreads to the orifices of the adjoining viscera, causing them to act together. The nervous or functional affections of the bladder, which often complicate the various forms of uterine inflammation, are heat, uneasiness, or slight pain felt above the pubes; the frequent spasmodic contraction of the bladder to pass but little urine, tenesmus accompanying micturition, preventing the passage of urine, and sometimes rendering imperative the use of the catheter. The nervous character of these phenomena is clear, from the fact of their spontaneous subsidence, and of their being often easily removed by warm hip-baths, by warm abdominal fomentations, by a linseed-meal poultice sprinkled with laudanum or with powdered camphor, by abdominal friction with opiate liniments, by the use of cold-water abdominal bandages, and by atropia ointment spread on gutta-percha cloth, and applied as a plaster above the pubes. Sesquichloride of iron, internally given, is very useful in cases of chronic irritability of the bladder, and has even been looked upon by some as exerting a specific influence on the genito-urinary mucous membrane. Suppositories of opium or belladonna, either vaginal or rectal, are also invaluable, and, when the urine cannot be passed, I have given, with advantage, ergot of rye, in five-grain doses, every third or fourth hour, also small quantities of nux vomica or strychnia. When these measures are of no avail, the womb should be looked to, for, by curing unsuspected uterine disease, I have sometimes speedily relieved the vesical disturbance. What one man calls chronic cystitis, another calls irritable bladder, for one of these states shades into the other, and the irritable bladder will be benefited by a very simple treatment of chronic cystitis, strongly recommended by Dr. George Johnson. He has published, in the *Lancet*, cases in which an exclusively milk diet was speedily successful, although the complaint had lasted several years. The *modus operandi* of the milk diet is sufficiently obvious, for the urine is thus largely diluted with water, and rendered mild and unirritating by the digestible

nature of the food; the bladder, therefore, being comparatively undisturbed by its contents, the inflammation of the mucous membrane subsides, and the morbid secretion of pus and mucus ceases.

The foregoing statements relate to the influence on the bladder of an inflamed womb occupying its right position, but, if it be anteverted, it will press the bladder, and this it often does to a very great extent, without giving rise to any vesical symptoms, for the bladder is made to bear with impunity extensive pressure and displacement. When, however, the womb is so completely anteverted as to lie flat across the pelvis, it may account for vesical disturbance; but to attempt to cure vesical symptoms by fumbling in the vagina to give a right position to a moderately-displaced womb, would not be creditable practice. It is well to intimate to the patient the existence of any amount of uterine displacement; for, on hearing of it, for the first time, from a new doctor, she might naturally conclude that he had found the key to sufferings hitherto inexplicable. The difference between the two practitioners being, that the second attached undue importance to the necessary result of long-continued uterine congestion. The practitioner will guard against allowing the urine to be too long retained, not depending on the patient's assertions, but examining with the hand above the pubes, for, by letting retention last too long, serious injury may be done to the bladder. If one is over-active in employing the catheter, the very trouble may be established that is sought to be cured; generally, however, the patient passes urine before any serious damage has been done, and by diverting her attention as much as possible from the retention, and by attending to the general state of health, it may vanish sooner than if the treatment had been more active. One may allow thirty-six hours to elapse before using the catheter, but much will depend on the state of vesical repletion. An opiate, a warm bath, and a purgative will most probably succeed in removing the retention, but if not, after allowing the above-named time to elapse, it will be best to use the catheter. There is a kind of retention of urine occurring after severe nervous or physical depression, which cannot be classed with those just described. It doubtless arises from a want of nervous power, and yields to treatment adapted to the improvement of the general health. Mr. Gant considers sulphuric ether more useful than any other antispasmodic to relieve irritability of the bladder; and by establishing the fact that hyoscyamine and atropia pass out, undecomposed, through the kidneys into the bladder, Dr. Harley has enabled us to understand the utility of henbane and belladonna to blunt the sensitiveness of irritable bladder.

We have seen that nothing so conduces to the cure of internal metritis, as to insure freedom of exit to its fluid secretions. There is another mode of curing irritable bladder, and even cystitis, founded on this principle.

In imitation of Mr. Barnard Holt's elastic-winged catheter, Dr. Dowse[1] leaves in the bladder a self-retaining female catheter, and in cases of long-continued incontinence of urine he found this sufficient to greatly amend the case in forty-eight hours. By preventing the accumulation of urine in the bladder, and its unavoidable decomposition, the mucous membrane healed, and the muscular tissue ceased from straining. The forcible dilatation of the rectum, of the vaginal orifice, and of the cervical canal, for spasm of the rectum, for vaginismus, and for dysmenorrhœa, doubtless suggested to Mr. Pridgin Teale[2] to cure irritability of the bladder and incontinence of urine by analogous treatment, and he found that, although in some cases the urine dribbled away for a few days after the operation, it was generally retained, so that in the night following the operation, women who for years had been obliged to get up seven or eight times a night, only got up once or twice and not at all afterward. This plan has been adopted by Mr. Christopher Heath, and by American surgeons. With regard to the operation, the patient being under the influence of an anæsthetic, Weiss' dilator is introduced into the urethra, and dilatation is continued until the urethra is distended so as to admit two fingers. The dilator ought to be passed as far into the bladder as possible, otherwise the branches of the instrument yield too much to the resisting neck of the bladder. It is desirable to dilate slowly, so as to avoid, *as far as possible*, laceration of the mucous membrane of the urethra. In many cases this laceration occurs, although due care has been taken, and, in consequence, much more pain is felt during the following days.

Cystitis.—Acute inflammation of the bladder is a rare complication of uterine inflammation, except when the womb has fallen outside the vulva. I have, however, seen cases in which a frequent desire to micturate, with exquisite pain on passing urine mixed with pus and ropy mucus, continued unabated for months. The urine should, of course, be examined, for its constituents will direct treatment, though I do not believe that the phosphates so frequently found always indicate a morbid condition of the blood. The superabundant vesical mucus acts as a ferment in the urine: it decomposes the urea into carbonate of ammonia, renders it alkaline, and phosphates of lime and ammoniaco-magnesian phosphates are deposited as well as insoluble carbonates. When, in the course of uterine disease, urates are found in the urine, they are the result of fever, and mucus is not abundant.

The first thing to do in such cases is to place the patient at rest in bed; to give hip-baths and warm vaginal injections; and to apply leeches to the lower abdomen, if the pains are very severe. A rectal suppository

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[1] Observations on the Female Bladder, September, 1873.

[2] Cure of Vesical Irritability and of Incontinence of Urine. Lancet, November, 1875.

of two grains of opium, once or twice a day, will give ease, and the urine should be rendered as bland as possible by the administration of alkalies. From five to ten grains of henbane a day, given in pills, is not to be omitted, and the patient should be always told what amount of fluid she should take. In a bad case I was surprised to find this treatment ineffectual, when I found out that the patient refrained from drink for fear of being so often disturbed at night. By this means she so concentrated the urine that she had to extrude it with violent fits of tenesmic pain. She soon got well, without change of treatment, on taking from two to three pints of milk and water and soda water a day.

It should be borne in mind that the pus found in the urine may be the result or pyelitis, or of suppurating kidney. Obstinate cases of cystitis have been treated satisfactorily by forcible dilatation of the urethra; but there may be room for another mode of treatment, recommended by Dr. Braxton Hicks, though Sir Henry Thompson does not think it of much use to wash out the bladder with medicated fluids. Dr. B. Hicks says,[1] "that at first the presence of the catheter gives much pain and distress; but, after a few days it may be used without pain, and the act of washing out the bladder rids it of the alkaline secretions, the mucus, and the entangled crystals, which increase the original trouble to a degree one would scarcely imagine, till you see the great relief obtained by ablution with an acidulated fluid. I first of all wash out the bladder with warm water, slightly acidulated with a few drops of nitric, hydrochloric, or acetic acid (a tablespoonful of vinegar to a pint of water answers very well) to the ounce. As much as the bladder can bear should be used. This is allowed to flow out again; and, if it can be borne, another similar quantity is injected and allowed to flow. After this a grain of morphia, dissolved in one ounce of water, slightly acidulated with hydrochloric or nitric acid, should be thrown in, and allowed to be retained as long as it can be borne—the longer the better. This should be repeated, if possible, twice a day. The fluid should be thrown in very gently; an ordinary gum-elastic catheter will do, fitted to a syringe holding three or four ounces. It is well not to pass the catheter far beyond the neck of the bladder, otherwise, if it touches the sides or back, the distress is great, for in such a case more force must be used upon the piston of the syringe. Now, although some temporary distress is caused by the operation, it will, as a rule, be found attended with so much benefit, that it far outweighs the pain. Some authors have stated that the employment of injections has caused so much pain, that it has led them to discontinue them. I can only speak from my own observation, which quite tends to the opposite. It may be, that done for the first time it has acted so, but if they are continued this soon wears off, and in its place a marked improvement results.

[1] Lancet, August, 1875.

If the condition does not much improve by means of previous measures, I venture to try an astringent, such as one or two grains of tannic acid to one ounce of water. At first this produces an increased contraction of the bladder, but it subsides after one or two applications. If the urine be putrid, I have found the employment of chlorate of potass in four to five grains to an ounce of water highly useful. I was led to its use in the following manner: In a case of this nature, of a very severe character, where life was in jeopardy, I ordered a gargle of chlorate of potass for the severely aphthous mouth. By mistake it was injected into the bladder instead of morphia. Immediately the putridity of the urine ceased, and the patient began to improve in general state and in local symptoms. So marked was this, that although she had up to that time been steadily going down, directly the injection was used the change for the better was most marked. In similar cases I have tried it many times, and always with good results. It may, however, give some pain if too strong.

"If in some cases there is bleeding combined, I have used tannic acid in two to four grains to the ounce of water; or, even tincture of muriate of iron, diluted with water. It might be supposed that much distress would ensue from the use of the latter drug, but with care it can be borne. Of course it is not allowed to remain in the bladder, which is even washed out with water afterward. In a case of severe hæmaturia, with a large quantity of mucus, and very frequent desire to pass urine, admitted under me at Guy's, I tried gallic acid without success, but one grain of carbolic acid in six ounces of water has done well. One part of tincture of muriate of iron, diluted with nine parts of water, was then injected into the bladder, using a quantity at each time sufficient to well fill the bladder. It was allowed to pass away through the catheter. The bladder was then washed out, and a dose of morphia left behind. This was painful at first, but it appeared not to have been much more so than the ordinary pain. This was continued for some time with a slow, but ultimately decided improvement of all the symptoms. At first probably a tablespoonful of blood passed daily, but when I last saw her there was none, though still some mucus. She left the hospital before she was quite cured, and the symptoms somewhat returned. However, upon re-admission, she was again treated in the same way, and left quite free from cystitis. I was fearful at first that she had villous disease of the bladder, which is accompanied by much hemorrhage. It was curious that, upon one occasion, eight grains of morphia by mistake, instead of one, were injected after the iron had been used. The effect was very marked, but not enough to give rise to anxiety. How long it remained in the bladder did not appear. However, she was very much improved after this, and it seemed to have been for some reason decidedly beneficial. Nitrate of silver solution—thirty grains to the ounce as a maximum—may also be used in the chronic forms. It is best to wash out

with water first, even in those cases which have not much mucus, otherwise the saline ingredients decompose the nitrate of silver, and it loses much of its power. This will, of course, to a certain extent, always be the case. I have used thirty grains without any severe pain, and with much diminution of the distress, after the first pain of the application had subsided. As with the tincture of muriate of iron, it should be used in plenty, and only for a short time, the bladder being washed out after for the first or second time.

"By the daily use of these remedies you will in the simpler form of cystitis get rid of the more acute symptoms shortly; but, as regards the irritability of the bladder which often succeeds this, we must continue the use of the morphia for some little time—every day, or as frequently as seems necessary."

Cystitis is sometimes caused by pelvi-peritonitis, by ovarian or fibrous tumors of the womb, and it merges in the pelvic wreck of cancer. When the womb is at the vulva, it entails vesical tenesmus and a difficulty of passing urine and fæces; if it hangs below the vulva, it generally drags the bladder from its normal position, thus inducing cystocele. Situated at the upper and anterior portion of the pendant mass, the bladder is liable to be wounded, and it is still more liable to become inflamed, owing to the stagnation of urine, sometimes causing calculus and frequent excoriation of the nates. In a similar manner, the anterior portion of the rectum may be drawn into the tumor, and the inflammation of these cavities often causes the chief misery of procidentia; hence it will be evident that cystocele is to be cured by treating the main complaint. It will be, moreover, useful to sound the bladder frequently, and for this purpose the male catheter, or a small gum elastic one, with stilet, should be introduced, so that its concavity may be directed forward and downward, the stilet being withdrawn as the cathether passes upward.

Gastro-intestinal Diseases.—The frequency and persistency of the gastro-intestinal complications of uterine disease are well explained by the close anatomical connections of the reproductive and digestive organs, and by relations so intimate that, as I have demonstrated in another work, menstruation is almost always accompanied by some disturbance of the bowels, and usually by relaxation. The complications that I shall pass in review are: Dyspepsia, Congestion of the Liver and Biliousness, Nausea and Vomiting, Intestinal Irritation and Enteritis, and Diseases of the Rectum; and, although I am obliged to take them separately, they often alternate, or are variously combined in the same individual.

1. *Dyspepsia.*—Whether the body or neck of the womb be inflamed, this condition seldom continues long without compromising the digestive functions, and it would take a volume to describe the varieties of gastric and intestinal disturbance that may arise; their treatment must be sought for in the chapters on Dietetics and Tonics; I again, however, take the

opportunity of impressing upon young practitioners the almost utter impossibility of curing the dyspepsia of confirmed uterine disease by high living, or by tonic medicines, without such treatment as the womb may require.

2. *Congestion of the Liver.*—This is a frequent accompaniment of disordered menstruation, and of disease of the womb. Dr. Butler Lane has well explained that the reaction of these organs, one on the other, depends less on the nervous sympathy than on the fact that the veins of the uterus communicate with the portal system, so that a sudden check of the uterine flow may congest the liver and spleen. This compensating interchange between the liver and the womb explains some of the phenomena of amenorrhœa, of chlorosis, of the change of life, and of uterine disease, as met with at home, and still more so in India.

In one patient, the very painful and scanty menstruation of a congested womb was frequently accompanied by bilious vomiting, ten or twelve times a day, and by the passing of bilious motions. In another lady there was an enormous outpouring of green bile about every month, but this never occurred after the cure of the uterine disease. This position is well brought out by the following case. M. H——, a dispensary patient, aged nineteen, with dark hair, swarthy complexion, and a mouth often looking as if it had been painted with yellow, was eminently bilious; and, to use her own expression, "If anything were to upset me, I should go on and be sick for two days." Vomiting, during menstruation, lasted from one to three days, with slight intervals of respite, and with just as much bile in the last as in the first vomiting, the sickness being accompanied by violent pain in the sacrum. Vomiting was always worse at menstrual periods, if, during the previous week, the patient had "felt the bile rising in the mouth." Sickness was often the initial sign of menstruation; for she was repeatedly awoke at night by a violent fit of sickness, and then the menstrual flow would make its appearance. This incessant vomiting produced so much debility, that during the four or five days following menstruation she was quite unfit for work. She either could not sleep during this period, or felt inclined to sleep night and day. The menstrual flow was often retarded and scanty. I gave this patient diluted nitro-muriatic acid in an infusion of cascarilla, before meals; ten grains of carbonate of soda after meals; advising three grains of calomel, and a black draught to be taken a few days before menstruating. I moreover prescribed two grains of acetate of morphia with two drachms of chloric ether in a six-ounce mixture, telling her to take a tablespoonful in an effervescing draught after being sick, and to repeat the dose after every fit of vomiting, until she had finished the medicine. This treatment was to a certain extent effectual, when, after a few months, severe abdominal pain, back pain, a brown discharge, nausea, vomiting, and vulvitis occurred; and, on making an examination, I found the neck of the

womb sound, but its body was very painful, and slight pressure caused retching and hysterics. Thus it appeared that, instead of the sickness being merely associated with menstruation, it caused the sickness every month, by rendering more acute the chronic congestion of the body of the womb. I ordered mercurial and belladonna ointment to be rubbed freely over the abdomen, acetate of lead injections, aloe and myrrh pills to be taken occasionally, and effervescing draughts. The morphia was not uniformly effectual; on rare occasions the whole mixture would not prevent sickness, though it usually made it cease at the end of twenty-four hours. Two grains of morphia were sometimes taken in five hours without producing sleep; at others, the patient would take the mixture, then sleep, wake to vomit, take the mixture again, sleep, and so on, until the stock was exhausted or the sickness conquered. If the opiate procured two hours of *continued* sleep, there would be free perspiration, more abundant menstrual flow, and sickness would be lulled for a few hours. Even when the sickness was not speedily stopped, the remedy abated the tormenting pain in the sacrum. The opiate enabled the patient to get to her work the day after the sickness subsided, instead of remaining helpless for a few days after every menstrual period. After a year, a few doses of the morphia were sufficient to check the sickness.

The pertinacity of congestion of the liver at the cessation of the monthly flow is very great, and is abundantly shown in my work "On the Change of Life;" and this intensity of liver disease was noted by Fothergill, Sir C. Mansfield Clarke, and by Dr. Evory Kennedy, who remarks "that an engorged state of the uterus is very liable to alternate with, translate to, or coexist with, congestion of the liver and the spleen." Simpson has also well said "that, in some cases, to cure the womb, seems almost to rectify the coexistent and perhaps resultant hepatic derangement; while in others we are unable to correct internal diseases till we have used appropriate means to modify and correct the attendant hepatic disorders." The younger men fear too much to give mercury, but we should let our patients have the benefit of so valuable a remedy, whenever congestion of the liver evidently complicates diseased menstruation or uterine affections. Mercury neither cures uterine affections nor checks flooding, so far as my experience goes, but it relieves the liver and renders the womb more amenable to treatment. Salines and cooling purgatives are called for, and their action will be assisted by temperance and exercise. Taraxacum is a good remedy, but, like Dr. Eastlake, I have noted that podophyllin has an emmenagogue tendency. Dr. Wright has highly praised hydrochlorate of ammonia, and stated "that it is immediately absorbed into the portal veinules that ramify beneath the surface of the digestive tract, and is, therefore, an important agent for the relief of hepatic portal congestion." This remedy has been long given by the Germans as a *deobstruent*, and Dr. Atlee gives it for this

purpose in cases of uterine fibroids; but I have no experience of its value.

Nobody now gives emetics, except to remove poison or undigested food from the stomach, but they are, nevertheless, invaluable in cases of confirmed biliousness with foul tongue, nausea, and a congested liver. No doubt this state can be rectified by repeated doses of calomel or blue pill, combined with brisk purgatives, salines, temperance and exercise, but one emetic would often cut short the complaint, and render the repetition of calomel unnecessary. An emetic is likewise serviceable, as a preface to further treatment, when the stomach is full of ropy mucus, or of corrosively acid secretions. Vomiting is evidently a part of Nature's plan of treating some complaints; it seldom damages pregnant women; and if emetics were given too often in the latter end of the last century, and if Stoll exaggerated the action of the liver in pathology, this does not do away with the fact that Nature will not be bullied, and that she will take a long time to evacuate by the bowels what she could speedily eject from the stomach. To bring on vomiting in delicate women, twenty-five grains of ipecacuanha in a little cold water should be given two hours after a light meal. Women whose strength has been little reduced may have one grain of tartar emetic and twenty of ipecacuanha in a tumbler of water, to be taken in three times, at five minutes' interval, upon an empty stomach; copious draughts of tepid water being taken when vomiting sets in, to render it less painful.

3. *Nausea and Vomiting.*—Amongst the uncommon symptoms of uterine inflammation, none are so distressing as long-continued nausea, even if unaccompanied by vomiting. It lowers the strength by depriving patients of their usual amount of food, and produces a permanent state of nervous irritability and despondency. Those who can bear pain with unflinching fortitude will sometimes burst into tears while asking for some new remedy for this distressing symptom. I agree with Stolz and Dr. F. Churchill, that the vomiting of pregnancy much oftener leads to a fatal result than is generally supposed, and P. Dubois met with twenty fatal cases of vomiting in pregnant women. Sickness, as a symptom of uterine disease, is the consequence of its intimate association with many acts of the function of generation. It will suffice to mention that sickness is the most common sign of pregnancy; that it occasionally occurs during sexual congress as a sign of conception; in the midst of parturition; and during menstruation. It is almost needless to remind practitioners that sickness frequently accompanies amenorrhœa, with or without chlorosis, menorrhagia, and dysmenorrhœa, whether the stricture of the cervix be organic or spasmodic. Furred tongue, flatulence, acidity, and slight nausea are the frequent accompaniments of menstruation; and, on extensive inquiry, I find that vomiting accompanies first menstruation in about nine per cent. of cases, that it is a symptom of fully established

menstruation in seven per cent., and of its cessation in twelve per cent.; it being clearly understood that, in these cases, I was unable to detect disease in the ovario-uterine organs, and the sickness was therefore referred to nervous derangement, but if sickness be very severe and long-continued during menstruation, uterine disease may be suspected. Mucus, acid mucus, or mucus mixed with bile is brought up, and vomiting may be repeated during the whole menstrual period, but it generally takes place only at the beginning of the period, and early in the day. At cessation, vomiting is generally associated with biliary derangement of an obstinate character. Sickness may only accompany menstruation for a certain time, but I have known it to last from the date of early marriage until cessation, and to have recurred in the single from the first to the last menstruation. A preponderance of the biliary apparatus is certainly a predisposing cause to sickness at menstruation, but in some of the worst cases I have attended, there was no sign of biliousness; the tongue was clean and no bile vomited, so the sickness could only be considered as a reflex symptom.

Vomiting accompanying *diseased menstruation* is frequently severe and long-continued, and resembles so much the sickness attending inflammatory affections of the womb, that I shall treat of both at the same time. Sickness may accompany all uterine affections, and is not caused by the severity of the affection or by the size of an organic growth. There is often none with cancer of the womb, or with large fibrous tumors of this organ, while it may attend small fibroid to a distressing degree. This symptom is rarè in the inflammatory diseases of the mucous membrane lining the neck of the womb, whether it be excoriated or ulcerated; while, on the contrary, it is frequently observed whenever there is disease of the body of the womb, which is, as it were, the stomach of the reproductive intestine. Thus, out of fifteen patients who suffered intensely from nausea and vomiting, I attributed it to chronic inflammation of the body of the womb in nine cases in which there was an enlarged womb; the seat of constant pain increased by the patient's movements and by pressure of the finger, with brown or purulent discharge before or after menstruation, which was either too abundant or scanty, and of a brown or green color; the neck of the womb, the os uteri, and the vagina, being either sound or not sufficiently diseased to account for these symptoms. In one case there was an obstinate inflammatory state of the lining of the membrane of the neck of the womb, with purulent discharge. In another, a moderate-sized fibrous tumor of the womb at the change of life was the cause of vomiting. In another, most distressing nausea and vomiting were evidently associated with relapsing inflammation of the neck of the womb, which was only a part and portion of a general cachectic condition. In another, sickness was associated with hysteralgia, enteralgia, and other anomalous nervous symptoms. The slightest appli-

cation of the finger to the os uteri is sure to cause retching in a lady who has had a constitutional tendency to vomiting, but Locock considered it doubtful, as the patient was a confirmed opium-eater. In a case of internal metritis, sickness occurred only at the menstrual periods for a few hours, or for one, two, or even three days, during which time the patient continued vomiting with only five or ten minutes' interval of repose or sleep. Sickness accompanying uterine inflammation is a nervous symptom, often independent of biliousness or dyspepsia, to be explained by the mutual dependence of both the womb and the stomach on the same system of nerves. There was nothing unusual about the tongue in nine out of the fifteen patients. In two it was cleaner than usual. The tongue was very much furred in a patient suffering from enteralgia. Five suffered occasionally from heartburn or acidity, two were decidedly bilious, having had jaundice several times, and one was subject to the outpouring of a large quantity of bile once a month, or even more frequently; but in all these patients, sickness was often distressing when they were neither dyspeptic nor bilious, and those who had suffered most from sickness in pregnancy were most affected by it when subject to uterine affections. The daughter of a physician, now under my care, vomited very frequently every day for sixteen months, during part of which time she was under treatment for ulceration of the womb. Very little urine was said to have been passed in the course of the day, and very little food was retained; nevertheless she grew very stout. I have found nausea much more suggestive of organic disease of the womb than vomiting, which is often seen in hysterical women as a kind of simple outpouring of the stomach. The essential point in the treatment of sickness dependent on uterine affections is to cure them; this is often a tedious process, and, in the meantime, the patient anxiously calls for speedy relief. Sometimes the means used for the one end may fulfil the other; thus, I have repeatedly observed that leeches applied to the neck of the womb for the cure of its inflammation, produced a marked decrease of nausea or sickness; the same has occurred to Dr. Smith, of Weymouth; and Negrier reports favorably on the application of leeches to the womb when vomiting during pregnancy is caused by inflammation of the neck of the womb. I have seen sickness also suddenly stopped by the application of potassa fusa cum calce to the neck of the womb, and I have repeatedly found that the simple application of a solution of nitrate of silver to the congested mucous membrane of an inflamed womb checked vomiting when medicines were of no avail; so I am prepared to believe that Dr. M. Sims' recent assertion that, even when the cervix is healthy, the free application to it of lunar caustic is a cure for the incoercible vomiting of pregnancy. The replacement of an anteverted womb has cured vomiting, and Prof. G. Braun has published a case, in which the replacement of a retroverted pregnant womb was immediately followed by the ces-

sation of vomiting which had resisted all remedies; and Dr. Graily Hewett thinks that the incoercible sickness of pregnancy is due to flexion of the gravid womb, and to pressure on the uterine nerves at the seat of flexion.

Dr. Copeman, of Norwich, has found that the sickness of pregnancy may be checked by dilating the cervix with the finger. The plan has been found successful in other hands, and some American practitioners have been equally successful by the use of a sponge-tent to dilate the cervix.

Opium is the first remedy to be tried, and it is best to apply it to the womb by means of suppositories, containing two or three grains of extract of opium, or one grain of acetate of morphia. A solution of thirty grains of chloral injected into the rectum has been known to stop the sickness of pregnancy. While these drugs are taking effect, minor remedies may be tried, and, indeed, they often afford sufficient relief, such as effervescing drinks, seltzer or soda water, ginger beer, champagne (alone, or with milk in equal proportions), and saline draughts, all the more effective for being iced; ice pills, or very hot drinks, brandy and other cordials have the desired effect with some patients. When these fail, after assuring myself that the patient is not bilious, I give morphia by the mouth, and sometimes a small dose will have the desired effect; as in the case of a lady who was forty-seven years of age when she first consulted me. She married at thirty, and immediately after, and ever since, the menstrual periods have been accompanied by vomiting. Headache first appeared, and then sickness, which was frequent during twelve or thirteen hours, whether the menstrual flow was scanty or profuse. There was no uterine disease, and, as many of the remedies just enumerated had been fruitlessly tried, I gave one grain of acetate of morphia in a six-ounce mixture, directing two tablespoonfuls to be taken in an effervescing draught when sickness set in, and to repeat the dose every hour. The patient found two or three doses of this medicine sufficient to stop the sickness at menstrual periods until the change of life took place two years afterward.

In another case, the patient is frequently able to control vomiting by taking an occasional dessert-spoonful of a four-ounce mixture, containing one grain of acetate of morphia with twenty minims of diluted hydrocyanic acid, in Sir James Murray's fluid magnesia. In the case previously described, success was partly due to the opiates given by the rectum, and whenever pain is referred to the womb, it is well to try and subdue it by opiates applied in various ways in its vicinity, as by liniments and poultices, and to exhibit the same remedies in suppositories to be introduced into the rectum. I may here mention that sea-sickness can sometimes be checked by opiate suppositories, or by injecting into the rectum from fifteen to twenty drops of laudanum on going to sea; with the same in-

tention it has been long ago recommended to swallow thirty drops of laudanum before going on board. I have checked sickness by the application of a grain of acetate of morphia to the neck of the womb, but in one case, three such doses thus applied, every third day, turned nausea into vomiting, which is the well-known result of all opiates in some constitutions. The extract of belladonna externally applied, or in vaginal suppositories, and internally exhibited until the first symptoms of poisoning show themselves, will sometimes be found useful.

When morphia fails, I have often found calomel and opium check vomiting, even when there was no sign of biliary congestion; and when there is habitual nausea without signs of biliousness, it is well to give an occasional dose of calomel or blue pill at prolonged intervals. I occasionally have recourse to the sedative action of calomel, giving ten or fifteen grains. In two patients this invariably checks vomiting that has lasted for hours. Sir C. Locock told me that he has often adopted this plan with like success, and my friend, Dr. Fordyce Barker, has also found that ten grains of calomel will check the bilious vomiting of puerperal fever. Creasote made into pills with prepared chalk will be useful to stop troublesome vomiting, but carbolic acid is said to do better, one grain being made into a pill with prepared chalk. Oxalate of cerium often does no good, but I have occasionally found it invaluable to check the reflex sickness of uterine disease. I give two grains every two or three hours, but it has been given in ten-grain doses. In some patients sickness will be stopped by sal volatile, camphor julep, bitters, and astringents, such as calumba, rhatany, tannin. I have given strychnia with advantage—a quarter of a grain, with six drachms of tincture of ginger and four ounces of distilled water, a teaspoonful to be taken every one or two hours. I do not know whether salicine deserves its reputation, but I have tried, without advantage, the spirit of walnuts as prepared by Messrs. Corbyn. I have known patients relieved by taking, repeatedly, about as much horse-radish, scraped and moistened with vinegar, as would cover a fourpenny piece. More effectual remedies will be found in the tincture of aconite in five- to ten-minim doses, in the tincture of belladonna in ten-minim doses, and in the dilute hydrocyanic acid in five-minim doses.

Mr. Crochley Clapham [1] has found nitrite of amyl cure sea-sickness in 121 cases out of 124. He does not give more than three drops of the nitrite, poured on a handkerchief, and held *close* to the patient's nose. The inhalation must be conducted rapidly, so as to give the full influence of the drug without a *too free* admixture of air.

With regard to the diet of those weakened by long-continued vomiting, the first point is to let them have anything they fancy, and at what-

[1] Lancet, August, 1875.

ever hour they like. Every half hour it is well to give a teaspoonful of some nutritious food, such as milk, with rum or brandy, savory jelly, or an occasional biscuit, plain, sweet, or flavored with ginger. Many who suffer from long-continued nausea would never eat if left to themselves, so their friends should tempt them, at unexpected times, with a few mouthfuls of something nice. Such patients should be treated like pregnant women, and made to eat; and they should take a cup of tea or milk, to which a teaspoonful of brandy or rum has been added, as soon as possible after awaking, and before getting out of bed.

Like other practitioners, I have seen a blister applied to the pit of the stomach suddenly stop vomiting or nausea, and permit patients to take breakfast who had not done so for the previous fortnight. In one case the vomiting only stopped for two days, although the blister was kept open for eight. The surface of the blister may be dressed every day with a grain of acetate of morphia, until the wound begins to heal. Another means of checking sickness is to cauterize the pit of the stomach with a silver table-spoon dipped in boiling water. This generally causes a thin eschar to fall off in about a fortnight, and irritation is thus kept up for a month or six weeks. Faradization of the epigastric region has been found successful in a certain number of obstinate cases, the moistened conductors being applied to the epigastrium for a quarter of an hour before meals and for the space of five minutes in the course of the repast, a feeble current being first applied, and its intensity gradually increased. On several occasions, after having ineffectually tried most of these remedies, I have seen vomiting suddenly stopped by the application of six leeches to the pit of the stomach, although there was no sign of inflammation there, and although the patient's debility was such as not to justify the loss of blood. When other remedies fail, as in the following case, I have greatly relieved vomiting by establishing an issue at the pit of the stomach.

Mrs. S——, aged fifty-two, tall, thin, married many years, but never conceived. She enjoyed tolerable health until some years ago, when Dr. Bennet treated her for an inflammatory affection of the neck of the womb. This was cured, but the patient did not gain strength, and it became apparent that the body of the womb was inflamed, and that there was also a little polypoid growth springing from the vagina, so near the cervix that I at first thought it formed part of it. In the midst of a relapse of chronic internal metritis, vomiting supervened and continued for five months; it should be noted that, even when in excellent health, not only riding with her back to the horses, but boating on the smoothest water, and any fatigue or worry, would invariably bring on vomiting. Change of air had no effect on the sickness, and when I first attended her, in 1859, I successively tried most of the means of averting it which I have enumerated. In this case there was almost complete want of sleep,

so there was a fair ground for hoping that sleep might at least abate the vomiting, but preparations of opium did not agree; neither small doses had effect, nor two grains of acetate of morphia left in contact with the neck of the womb. Indian hemp sometimes soothed, but produced no sleep. Every meal was followed by vomiting, though doubtless a portion was digested. At all events, from want of sleep and food, symptoms of inanition came on, and, during the winter, the patient was half-frozen, and kept alive with brandy, Hollands, or Maraschino.

In July, 1861, the uterine affection was no longer troublesome, but the sickness was as bad as usual, and seemed connected with some morbid state of the ganglionic nerves, for there was intense and habitual abdominal pulsation. One day, when the patient was at the worst, I told her I should like to try an issue to the pit of the stomach; she then drew my attention to a little pimple at the lower end of the sternum, which had annoyed her for the previous days. This pimple, which was the result of a blister that had not risen, was poulticed, but in a few days it became a boil, or rather an abscess, more than two inches in diameter, and as it formed between the sternum and the skin of a much emaciated frame, the pain was most acute. As the abscess increased, more and more food was retained: subsequently, after two violent fits of retching, without bringing up anything, the vomiting stopped altogether, after having lasted two years, and the patient was able to digest roast beef, and other articles of ordinary diet. When vomiting ceased, the patient had refreshing naps of from two to three hours during the day, and an unusually dry skin broke out into abundant perspiration. For a fortnight, while the abscess discharged freely, there was no sickness, but as the discharge diminished, food was occasionally rejected; nevertheless, the patient rapidly gained strength, so that in a month after the cessation of the vomiting, she went out in a Bath-chair. It was evident to me that the sickness would return when the wound healed, and I ineffectually urged converting it into an issue. In August, a fixed abdominal pain rendered it necessary to apply a blister, and during the three days it remained open, all the food was retained. This made the patient consent to have an issue at the pit of the stomach. I applied caustic potash, and the sickness abated when the eschar became loose, and a discharge was induced. In September, the patient was sufficiently well to go to Italy, whence she returned in 1862, her nervous system being so much strengthened that hysterical attacks had very seldom occurred and were slighter. For two years, while the issue continued to discharge, the patient often passed several days without bringing up any food, and only brought up one out of three meals on other days. As soon as the issue was allowed to heal, vomiting became more frequent, but it gradually ceased when menstruation ceased, and was replaced by distressing attacks of cerebral neuralgia that have resisted all remedies, and still recur frequently and unex-

pectedly, although this patient has exchanged confinement to one room for a very active out-door life.

I established the issue by means of caustic potash, instead of by the simpler process of an incision, because pain itself is remedial. It was the long, agonizing pain of the abscess which caused a dry skin to pour out perspiration, the food to be retained after two years' impossibility of doing so, and an unappeasable nervous system to be once more soothed by long-continued sleep. In another case of chronic inflammation of the body of the womb, the oft-repeated vomiting seems to alleviate the still more distressing abdominal pains, leading me to think that vomiting attendant on uterine disease is a symptom sometimes to be respected, so I have not sought to establish an issue in this case. All other remedies failing, Moscati applied the actual cautery to the pit of the stomach; for several hours there was no vomiting, and the patient was cured by the subsequent suppuration. Dr. Ferrand mentions having applied a moxa to the epigastrium with equally good effects, when pregnancy caused vomiting. In another case of mine, of obstinate sickness during menstruation, there was no vomiting so long as an axillary abscess was in full suppuration.

4. *Enteritis and Intestinal Irritability.*—Without being aware of Dr. Butler Lane's researches, and operating on seven hundred and fifty-eight cases, I found that the bowels remained undisturbed at the menstrual periods in one hundred and ninety-seven women, that they were confined in one hundred and eighty-five, and relaxed in three hundred and seventy-six. From this frequency of diarrhœa during healthy menstruation, it might have been inferred that severe or prolonged uterine inflammation would cause intestinal irritation, but it seldom assumes an aggravated form, at least in a temperate climate. Sometimes the patient complains of intestinal uneasiness, a tendency to constipation, intestinal flatulence, or of the bowels being "all of a work." If the patient be stout, this may obscure the diagnosis, as in the wife of a naval officer, in whom these symptoms were caused by a small amount of ulceration of the neck of the womb. On first seeing her, I was afraid there might be some abdominal tumor in the background, so large and hard was the abdomen, but I applied the solid nitrate of silver freely, advised acetate of lead injections, a warm purgative every week, tonics, and rubbing the abdomen with camphorated oil; and when, after a month, she returned to town, the abdomen had much decreased, as the other symptoms had abated.

Chronic inflammation of the body of the womb generally causes irritation of the lower bowel, which is evidenced by the presence of considerable increase of mucus in the motions, sometimes by small quantities of blood, at others by frequent tenesmic diarrhœa; or, by constipation, depending on a want of power to expel the feculent matter, the result of

paralysis of the rectum, or of the constriction of that portion of the intestine by the pressure of an enlarged retroverted womb. Inflammation of the colon depends on the patient's peculiarity of constitution, not on the intensity of the uterine inflammation. Thus, a young lady who had suffered several years from chronic inflammation of the womb, had diarrhœa during a relapse of the complaint. It lasted for several months, resisted treatment, but yielded by degrees to opiates given by the rectum. For the last ten years another patient always passes large quantities of mucus, with or without feculent matter; the bowels generally feel irritable; constipation is the rule, but diarrhœa occasionally occurs. Since I drew attention to the subject, my statements have been confirmed by Scanzoni and Aran; Nonat has even treated of it, as a special form of enteritis, and Dr. Bennet has stated that my researches had explained to him the coincidence of habitual diarrhœa with severe inflammation of the neck of the womb, leading him often to infer the latter, from the persistence of the former. The application of the acid nitrate of mercury to the lining membrane of the cervix caused dysentery in a patient, and I have known blood passed by the bowels daily, for years, in conjunction with uterine disease. In India and other warm climates, dysentery is a very frequent complication of uterine disease, and of the puerperal state; the persistence of dysentery rendering incumbent a return to Europe. All remedies will be ineffectual unless the ruling complaint be cured, but in the meantime the well-known remedies may be tried, and none will be found so effectual as morphia, although good may be derived from giving, every four hours, from ten to fifteen drops of the liq. ferri pernitratis in an ounce of infusion of calumba. The solution of morphia, in doses of twenty or thirty drops, is the only remedy that checks the diarrhœa in the case of a lady, in whom it has lasted ten years, since her subjection to uterine irritation. She is obliged to measure the remedy with great nicety, for if she does not take enough of it, diarrhœa prostrates her, and if she takes too much, it causes distressing intestinal irritation. A lady, from whom an amyloid tumor was twice removed, has, during the last fifteen years, suffered much from inflammation of the colon, and, for the last four months, has passed from fifteen to twenty motions a day, notwithstanding well-known remedies. A grain of opium every fourth hour, a quarter of a grain of morphia in a starch injection every fourth hour, did good, but three grains of blue pill given at night, made her worse.

5. *Diseases of the Rectum.*—Gynecologists see a good deal of diseases of the rectum. The frequency of piles in married women is well known, and fissure of the anus is said to be more frequent in women than in men, though I have seldom met with it in my practice, and it may cause vaginismus, or render connection very painful. It therefore behooves the practitioner to be on the lookout for disease of the rectum, and not to be content with its digital examination, but to use the anal speculum. If

the case be doubtful, before deciding on any operation, the rectum should be well everted by the index finger placed in the vagina, the patient being under anæsthetic influence.

Irritability of the Rectum.—I am occasionally consulted by patients who only complain of a frequent, dull, aching pain in the rectum and anus, which is increased by standing and sitting, who have been solely treated for disease of the rectum. On inquiry, I find that there is also back pain and uterine discharge, and, on examination, the neck of the womb is situated as it should be, but inflamed. Surgical treatment causes the symptoms of uterine disease to disappear, although for a time the patient is liable to their return. I then advise belladonna and henbane suppositories to be introduced into the rectum at night. The pressure of a retroflexed or of a retroverted womb on the bowel will increase the symptoms, but is not indispensable for their production. Sir C. M. Clarke observed that a discharge of mucus from the vagina is a concomitant symptom of piles, because the internal iliac artery supplies both the hemorrhoidal vessels and those which furnish the vagina with blood, and he thus explained the difficulty of restraining this discharge till the hemorrhoidal tumors are removed. The reverse is equally true; for I have frequently seen hyperæmia of the rectum, and hemorrhoids, caused by chronic inflammation of the neck of the womb, and kept up by it, particularly if the retroverted or flexed womb pressed on the rectum. By curing the uterine disease, the tendency to hemorrhoids disappeared; and this accords with the experience of others, who have seen uterine inflammation originate and keep up an habitual congestion of the rectum and prolapsus ani. With regard to the treatment of hemorrhoidal affections, it cannot be successful without the satisfactory treatment of the uterine disease, for they aggravate each other; and should blood be lost both from the womb and hemorrhoids, as sometimes occurs at the menstrual periods, the strength of the patient is greatly impaired. The vaginal injections required for uterine inflammation also keep down hyperæmic tendencies of the rectum, and the same object will be promoted by the injection of half a pint of nearly cold water into the rectum twice a day, which will also relieve the bowels. If not, the mildest aperients should be tried, such as milk of sulphur, tamarind- or senna-electuary, Gregory's powder, castor oil, or saline purgatives. It is unnecessary to avoid aloes; for, out of the many hundred cases in which I have given it, I have only once traced hemorrhoids to its action, and neither Schönbein or Aran has mentioned them as a result of treating amenorrhœa by strong aloetic enemata. Dr. Fordyce Barker has recently stated having given aloes to a host of pregnant women without its having brought on piles.

Hemorrhoids.—I must share the blame with another doctor in the following case: In 1871, I was consulted by an unmarried lady, aged twenty-two, who complained of bad, painful menstruation, pain in passing

water, and intense pain at the lowest part of the sacrum, and of an occasional passing of blood with the motions. On examining her, I found vaginitis and chronic inflammation of the cervix, but nothing wrong about the anus, and I said that the rectal symptoms were the results of the uterine disease, and that by curing it the rectal symptoms would disappear. This only proved true to a certain extent, and although I occasionally attended this lady during the last six years, I was never told about the evident persistence of anal disease. There was, however, such an increase of anal swelling, throbbing, and loss of blood when my patient was at the sea-side, in the winter of 1876, that a doctor was consulted, and, after carefully examining with the finger only, he said there were no piles. As the loss of blood became alarming, after her return to town I made a more careful examination, and finding two flat piles and one ulcerated, Mr. Curling removed them. It was all very well for me to suppose that the severe sacral pain would depart when the womb was cured, but, as it did not, I should have examined for piles, and I am sorry to say the pain is still almost as bad as ever, although a year has elapsed since the operation. In another unmarried lady of twenty-five, inflammation of the cervix could not account for a sharp abdominal pain, and loss of blood by the bowels. I first thought this might depend on intestinal ulceration, because there was not the least anal heat, swelling, or throbbing, but finding medicines useless, I examined and found a flat pile, and an operation was soon followed by a perfect recovery.

Inflammation of the Rectum.—Occasionally those laboring under uterine inflammation really suffer likewise from inflammation of the rectum. The pain is sometimes exquisite when the rectum is pressed by the finger introduced into the vagina; defecation is very painful and followed by tenesmus, continuing for hours; an examination of the rectum with the finger makes the patient scream, connection is intolerable, and she cannot sit without feeling great pain. A small quantity of mucus, or a little pus oozes out of the rectum; the motions contain more mucus and sometimes blood. This state never entirely disappears in some patients, and is aggravated by menstruation. In the wife of a clergyman suffering from chronic inflammation of both body and neck of a retroverted womb, this caused a hard swelling about the size of a walnut in the areolar tissue between the anus and the vulva; after giving great pain for a few days, the little abscess broke, and about a teaspoonful of matter came away by the anus. This has occurred five times, and always at a menstrual period. The finger could likewise feel the urethra like a hard cord, twice the size of a goose-quill. The pain was very much increased by walking, which also caused the sensation of a swelling and a difficulty to pass scalding urine. There was also the remnant of an irritable tumor of the meatus, and follicular inflammation of the mouth—the follicular eruption, coming up one crop after another,

producing small ulcerations, with great pain and an inability to take solid food: a singular instance of the proclivity to disease of several mucous membranes. Patients should be cautious in the use of enemata, and not inject more than half a pint of fluid, and they should see that the end of the tube is quite smooth. I have known patients made worse by injecting two pints of fluid, and salt water or soap and water is far too irritating. When inflammation is acute, injections should be made once a day with half linseed-tea and half a strong decoction of poppy-heads; a good injection is made with equal quantities of saturnine lotion and decoction of poppy-heads, but the lead must not be long continued. Various other injections have been tried to relieve the distressing symptoms; nothing succeeded so well in one case as tepid water to cleanse the bowels, and then to inject half an ounce of the following solution: two ounces of warm, thin starch, with two drachms of acetate of lead lotion and of tincture of henbane. In another distressing case, half an ounce of a solution of twenty grains of sulphate of zinc, with half a drachm of tragacanth emulsion, in one ounce of cherry-laurel water, with three ounces of distilled water, was injected every morning after the bowels had acted, and at night the patient introduced into the rectum a small quantity of an ointment containing two grains of acetate of morphia and one of sulphate of atropia, a drachm of olive oil and an ounce of cacao butter; these remedies were highly beneficial.

Semi-Paralysis of the Rectum.—Although not painful, this is a very annoying complication of long-standing uterine inflammation, occurring when patients have neglected their bowels, or have been obliged to keep very long in bed and to take large doses of opium. The bowels in these cases seldom, if ever, act of themselves; purgatives bring the fæces to the rectum, but it has not power enough to expel them, and there they would remain if their exit were not obtained by an injection. This is sometimes unsuccessful, and patients are obliged to withdraw the scybala with their fingers; for this reason they live in dread of the day when medicine has to be taken. If the patient neglects herself, intestinal obstruction may arise, and it will be necessary for the surgeon to empty the rectum by the finger, or by means of the handle of a large spoon. In these cases various injections should be tried, containing salad-oil, salt, or soap. If suppositories are required, they should be made of belladonna and henbane, which relax the bowels, rather than of opium, which confines them. Small doses of ergot of rye, of nux vomica, or of both combined, have done me good service; they likewise help to restore tone to the muscular coat of the bladder, should it have lost its power.

Rectocele.—If the rectum is full of fæces, it is felt as a tumor projecting from the posterior wall of the vagina; the diagnosis is clear, when the finger, after passing the sphincter, can easily make its way into the

vaginal pouch. This vaginal malformation is the result of the defective involution of the vagina after repeated child-bearing, and may be quite independent of uterine inflammation. For, as the completely prolapsed uterus may dislocate the bladder, it may do the same to the rectum, though not so completely, because the connections of the uterus with the rectum are not so intimate as with the bladder. The distending mass drags down the posterior wall of the vagina, forming a depression, increased by fecal accumulations—for, in such cases, the bowels are very imperfectly relieved; straining increases the prolapsus, and the patient is often condemned at last to have recourse to mechanical measures, as in partial paralysis of the rectum.

Spinal Curvature.—I doubt not that most orthopedists well understand the great importance of setting right diseased menstruation, and of curing uterine disease, in the young women confided to their care; Mr. Barwell has insisted on this, and talks of "uterine curves of the spine." Nevertheless I have met with cases in which chronic uterine inflammation has been ignored, and with patients who, instead of surgical treatment of the womb, had been for years made to wear a complicated bandage, or who for years had been made to lie on hard beds without pillow or bolster. I once had a patient whose back had been broken, in the literal sense of the word, by internal metritis, for the upper dorsal vertebræ gradually formed a right angle with the lower and lumbar vertebræ. When thirty-one years of age, this unmarried lady, who had long suffered from chronic inflammation of the cervix, had so severe an attack of endo-metritis, that for three weeks she remained in a crouching position, day and night, with her face buried between her knees, with chance snatches of morphia-sleep. When the ferocity of the pain subsided, it was still so severe, that I could never get her to lie down in bed. She had been up and about, in an invalid fashion, for some time, when, eighteen months after the attack of metritis, her mother called my attention to the projection of the third or fourth dorsal vertebra. I took the advice of Mr. Bishop, who recommended the patient to lie constantly on a double-inclined plane, but, as she would not submit to this, the deformity went on increasing for eight years, until the back described a right angle, instead of its usual curved line. Fortunately the functions of the spinal marrow were not interfered with; there was considerable abdominal pain, partly caused by the crowding together of the internal viscera, but there was no return of uterine disease, and the patient was able to be very active in her household duties up to the eve of her death.

Consumption.—Dr. H. Bennet has started the idea that confirmed uterine inflammation leads to phthisis. I can quite understand, that among those who resort to Mentone, there are women suffering both from tubercular deposit in the lungs and from uterine disease, in which case I should look upon both complaints as in no wise standing in rela-

tion of cause to effect, but as the joint result of the same cachectic condition of the system. There was no consumption in most of the confirmed invalids that I have attended, although many have been deprived of exercise, and more or less confined to the unhealthy atmosphere of a bedroom for many years. Dr. Bennet's views are, however, supported by Dr. Emmet, who goes so far as to speak positively of dysmenorrhœa frequently causing the early cessation of menstruation, and thereby being a frequent cause of phthisis in comparatively young women, which is contrary to my own experience. I do not agree with those who hold that, in consumptive patients, it is wrong to cure uterine disease, for I have seen such patients all the better for getting rid of a debilitating discharge and an irritating uterine sore.

CHAPTER XIII.

STERILITY.

LIFE is the chief marvel of creation; and the life of man, with its unknown future and imperishable destinies, is the one thing immeasurably valuable; while, to the statesman, life means the main source of the power and of the importance of a state. The love of progeny is so strong an instinct that, with every other blessing, many are miserable because they have no children. No wonder, then, that we should be so often asked to remove the causes of sterility. Dr. Mathews Duncan has shown that three-fourths of married women have a child during the first year of their marriage, so it would be better for those who have no family at the end of that time, and who are anxious for one, to let it be ascertained whether sterility depends on any remediable impediment; for the same observer has made out that, if women do not conceive during the first three years of their marriage, the chances are 13 to 1 that they will remain sterile, and such is said to be the case in England with one out of six married women. Dr. Sappey has shown that the seeds of life have been sown as prodigally in woman as throughout the rest of creation; that conception is much more frequent than is admitted, but the frail bark, laden with human life, that is ever detaching itself from the ovary, may be wrecked on its passage to the world in many various ways, and thus rarely reaches the fulness of infantile perfection. When menstruation is spoken of as being delayed for a few days in married women, and as unusually profuse and prolonged, it is most likely an early miscarriage; and Serres states having frequently found the fecundated germ in what was supposed to be a mere blood-clot, but it usually passes away undetected, or, if sought for, would often escape detection, owing to partial decomposition. In sketching the obstacles that may prevent the impregnation of the germ, we must remember that the ovary has been found to be so coated with false membranes, that there could be no possibility of the germ leaving that organ. As it starts from the ovary, the ovule may not be seized by the fimbriated extremity of the oviduct, because inflammation may have destroyed the fimbria, or closed the opening of the oviduct, or so bound it down as to prevent its intended action. On arriving in the womb, the ovule may

be destroyed by the uterine secretions, rendered acrid by internal metritis. After this stage, the chance of impregnation depends on the possibility of the sperm ascending to the womb, for without its vivifying contact ovules soon fall to pieces. Of those that are impregnated, many soon come to grief because the lining membrane of the womb is not healthy enough to afford them a local habitation. Of those that succeed in effecting a proper lodgment, some are speedily thrown off by the many imprudences that are so stupidly accepted as the indispensable duties of the early life of a bride—fatigue, excitement, travelling, riding, particularly during menstrual periods. While the products of impregnation generally pass away unnoticed, conception may be evident, and give fair hope of a favorable issue, but the fruit drops off at the second, third, or fourth month; some of these miscarriages are traumatic, others are clearly due to a diseased state of the lining of the womb; it may be syphilis, or internal metritis—the most important and least understood part of uterine pathology. The reader will have noticed that, in the progress of the ovule to the womb, and in that organ, sterility is caused by pathological conditions, women being made sterile by menstruation being allowed to be habitually morbid, by pelvi-peritonitis being mistaken for dysmenorrhœa, by syphilis, and by our not as yet knowing the best way of curing diseases of the body of the womb. Many women are, however, sterile because the sperm is prevented reaching the womb by a series of impediments that are partly medical, partly surgical, which it is best to describe as they are discovered by the practitioner—the superficial first, and then the deeper-seated. Whenever women consult us on account of sterility, being convinced that it must depend on some physical impediment not to be discovered without careful investigation, they come prepared to be examined, and would have a very poor opinion of any practitioner who did not do so before giving an opinion.

When a marriage is fruitless, it is assumed that the fault lies with the woman; this is not true in many cases, so we should make a point of seeing both husband and wife when we are consulted respecting sterility. In the absence of any of the signs of impotence, sterility may still be due to a failure on the part of the husband, for Dr. M. Sims has ascertained that men in robust health and seeming aptitude for procreation, may have no spermatozoa in their spermatic fluid. Severe disease may, perhaps, for a time cause the spermatic fluid to be without spermatozoa, but syphilis does not do so, or why does it so often set its mark on the fœtus? Occasionally gonorrhœa causes sterility by the induction of a specific form of internal metritis, and, when severe, it may likewise do so by destroying the spermatozoa. To consider the fact of a man having had gonorrhœa some years before marriage as a sufficient explanation of sterility would be unreasonable, and it seems to me that Dr. Noeggerath has only confirmed the well-known frequency of the disease, by ascer-

taining that ninety per cent. of sterile women were married to men who had gonorrhœa previous to or during marriage.

There is, generally speaking, nothing in the appearance of a young woman to lead one to understand why she is sterile, but too much hair on the upper lip leads me to suspect a defective state of the ovaries. The belief is founded on many cases in which I have marked the coincidence of the two, and on the well-known fact that some kind of moustache generally follows ovarian involution. The outward stygmates of syphilis enable one to suspect it as the cause of sterility in a given case. Great embonpoint has been thought a cause of sterility since the days of Hippocrates, for he says, "Quod si præter naturam crassior evaserit, utero non concepit," and, at all events, in plants, we must sacrifice their fecundity if we wish to see flowers decked in the fullest pomp of floral beauty.

It will not do to say that sterility always attends on abundant food, and that fecundity is sure to come of a half-filled stomach, for bishops and deans have often as many children as their poorest curates; still luxurious feeders are often sterile, and women with lives chequered by penury and affluence, have been known to be sterile when in prosperity and fertile when in want. This repeats in the highest region of vitality a well-known law in vegetable physiology, that a double plant produces fruitful seeds when placed in an impoverished soil. Whether the liability to twins in the lower orders is greater than in the upper classes I do not know, but triplets occur almost exclusively in the lower classes, and a gunner was the highest in the social scale, out of a list of thirty husbands to whom wives had given triplets. The fact of high cultivation in man diminishing his reproductive power, holds good in inferior animals, for while the action of the parish bull on the village cow is cocksure, our high class racehorses and rams are comparatively sterile. With regard to diet in relation to sterility, when I am consulted by too stout a person, I try to fine her down by exercise, mental labor, and by a diet from which bread, butter, milk, sugar, beer, and potatoes are to a great extent excluded. The waters of Ems, Kissingen, and Marienbad are supposed to reduce obesity, but only when taken so as to purge; less food than usual being taken, while exercise is pushed to sweating point. If weakly women have often large families, constitutional debility may cause some of those diseased conditions of the reproductive organs on which sterility depends. If the constitution rallies spontaneously, or by the use of medicines, conception may take place, and it frequently does, in spite of the persistence of cervical inflammation. In some women the reproductive organs are, to all appearance, perfect in form and function; there is nothing to explain sterility but confirmed debility, and they become pregnant if they can recover their strength; hence it follows that all the appliances of tonic treatment should be brought into action.

Age is, of course, of the utmost importance, and a senile atrophy of the ovaries takes place between the fortieth and fiftieth years of a woman's life; the power of conception ceases then except in rare cases; and Dr. Fordyce Barker has ascertained that there is not a single well-authenticated case of a woman over fifty-five years of age having given birth to a child. Many apocryphal cases have been reported by me,[1] but none are supported by conclusive evidence; hence the conclusion that the laws of physiology, the experience of mankind, and the decisions of the courts will justify the medical witness in declaring, when questioned in court as to the age during which child-bearing is possible, that a woman over fifty-five years of age is past the period of child-bearing. In further proof of the fact that, though menstruation and ovulation are generally coincident, they do not bear the relation of cause and effect, the one may exist without the other, as proved by many well-established cases. Cicatrices have been found in ovaries, indicating rupture of Graafian vesicles, many years previous to the appearance of menstruation, and fresh cicatrices have also been found in old women a long time after the cessation of menstruation; while there are now eight well-authenticated cases in which women have continued to menstruate regularly after both ovaries were removed. I know of two instances in which conception occurred during the change of life. One was a single lady, forty-seven years of age, in whom the menstrual flow had been very irregular for the previous two years, with that general failure of health which so often indicates cessation. The belief that impregnation was impossible at this period, led her to permit liberties, which were followed by pregnancy and the birth of a child. This case is the more remarkable, as connection only occurred once, seventeen days after a flooding, which lasted ten days, an instance of ovulation without menstruation. Fecundity is possible after cessation, because ovulation is not tantamount to menstruation, and the ovaries may, in rare instances, induce most of the symptoms of menstruation, shedding ovules without the womb discharging blood. Women sometimes conceive during lactation, before the return of the menstrual flow; and as, in some very rare cases, conception has taken place before first menstruation, so I believe it possible, in very rare cases, after cessation. Mr. Pearson, of Stalybridge, has published the case of a woman, who, at the age of forty-seven, was delivered of her tenth child, eighteen months after the cessation of the menstrual flow. He informed me, that between her last two confinements three years and four months had elapsed, and that after suckling the child she had been regular several months previous to the cessation of the menstrual flow, for which no cause could be detected. This woman suckled her last child, and has not menstruated since. Forty-six is not a very unusual date of protracted procrea-

[1] Change of Life in Health and in Disease, third edition.

tive power, but the fact of conception taking place nine months after cessation is unusual. As an instance of the eccentricities which characterize the generative function, I may mention that I know a lady who was married at eighteen; both herself and her husband enjoyed habitual good health, but conception never took place until the lady was forty-eight, when she bore a child; and another case is reported by Schmidt, where a well-formed female, who married at nineteen, did not bear a child until she had reached her fiftieth year.

I have known several women, long married, have no family, and all I could trace it to was bad menstruation from the very first; nevertheless it is right to tell an unmarried woman thus suffering, that marriage may be fruitful by improving menstruation. There are many well authenticated cases, ancient and contemporary, of conception taking place in women who had never menstruated; in some the menstrual flow was brought on by connection, and in others it followed parturition. There is, however, a risk of sterility in marrying under such circumstances: the risk being less if the organs of generation appear healthy and the breasts fairly developed, the risk being greater if the womb be undersized and the breasts atrophied. The very strong sympathies that bind the breast to the womb confirm the idea that by exciting the breasts we may powerfully stimulate the other organ. Hippocrates checked menorrhagia by stimulating the breasts; we still put the new-born babe to the breast to prevent flooding—but amenorrhœa has been cured by the same means; and the late Dr. Charles Loudon mentions that four out of seven patients were thus enabled to become mothers. A similar idea occurred to Marshall Hall, who suggested that a strong infant be applied to the breast, and Dr. Bayes, of Brighton, advised the application of the breast-pump, two or three times a day, just before the menstrual period. This reminds me of a case in which a hard and painful swelling of a portion of the breast became apparent in the wife of an eminent surgeon. It was pronounced cancerous by many, but Sir C. Locock and Sir B. Brodie thought it benignant; and this mammary tumor was the first indication that the menstrual function was going to be re-established after being absent fifteen years. The painful swelling subsided, the lady became pregnant, and has been safely delivered of five children, although Sir J. Simpson had given his opinion that she would never have a child, or would die in childbed should pregnancy occur. The physical appearance of organs may be perfectly satisfactory, but the hidden power that works the machinery may be above or below that moderate standard which is the best guarantee of healthy action. That connection should be pleasurable, is a sign of the reproductive organs being healthy, and it has long been remarked that Messalinas are sterile: this may depend on the inability of the germ to take root, or on its being speedily cast off in subsequent paroxysms of venereal excitement. There are barren women

in whom nothing seems amiss but too intense passion, and I remember a case in which it subsided after the prolonged use of cold hip-baths, cooling injections, and the internal use of camphor; soon afterward the patient became pregnant. For further details respecting the anaphrodisiacs that are said to exert special power over the sexual organs, I refer the reader to p. 105. Whether or not such cases are more carefully concealed, they less frequently come under my observation than those of the opposite extreme, frigidity. Women may be well-formed, happily married, and without any tangible imperfections of the sexual organs, and yet completely indifferent to connection, which neither gives pain nor pleasure, and while some of these women have never conceived, in many other women fine children have been the result of a union that gave no pleasure. In some other cases, where I can find nothing amiss, connection not only gives no pleasure, but acts as a poison to the nervous system, and causes a state of unconsciousness for hours, followed by headache and utter prostration, which does not wear off for several days. One of these ladies has been married twenty years and has one child, another eighteen, and has no family. In these cases, the toxic influence is less when connection is preceded by attempts to induce orgasm. It should also be known that sterility may depend on *physiological incompatibility:* man and wife living together for years, having no family, being divorced, marrying again, and having families, without any apparent change in their health, before or after the divorce.

Copulation is most likely to be fertile when the womb, the ovaries, and their erectile apparatus are in a state of active congestion; that is, during menstruation and a few days before and after. Without being caused by ovulation, menstruation frequently coincides with it, which explains the success that followed Fernel's advice to Henry II., and Ambrose Paré's advice to his Sovereign, to have connection during the menstrual epoch; and both B. de Boismont and Negrier assert that they have always found the plan successful. This reminds me of Coste's experiments on rabbits, which led him to believe that, in women, connection promotes the bursting of follicles which would have been otherwise delayed, an induction from experimental physiology which is confirmed by B. de Boismont's assertion, that in five instances in which connection prematurely brought on the menstrual flow, its date was that of conception, the children being born exactly nine months afterward. Increased congestion of the reproductive organs will, perhaps, explain why the Arabs race their mares before putting them to the stallion. Horse-exercise, carried to fatigue, may have a similar effect on women, and has been thought to have conduced to pregnancy. One might explain in the same way the reputed successful effects of flagellation, which was submitted to by women, as a cure for sterility, in some of the temples of Pagan Greece and Rome. A temporary separation of man and wife is

sometimes advisable to give matrimonial intercourse the stimulus of novelty. Castor, ambergris, cantharides, and aromatics are given for sterility in Eastern countries; these substances are all diffusive stimulants, some of them act specially on the reproductive organs, and increase power when impotence is independent of organic lesions.

The practitioner will gather from what precedes, that when consulted about sterility, his first duty is to see to the health of both man and wife, to give them tonics while keeping them apart, and to let them come together just after the menstrual flow.

Before passing in review the organic causes of sterility to be found on examination, it is well to give some idea of their relative frequency, as found by Dr. Charles Meyer in Berlin, and by Dr. Kammerer in New York. I say an idea, for to fully understand their statistics, it would be indispensable to know what they meant by chronic endometritis and uterine catarrh, and what amount of displacement they considered morbid.

Dr. Charles Meyer has published the particulars of 272 cases, among which he found 2 without uterus, 60 with anteflexions, 37 retroflexions, 35 anteversions, 3 retroversions, 45 cases of vulvitis, and among these, 14 with an entire hymen after several years of married life, 51 cases of chronic endometritis, 25 cases of ovaritis, 23 with ovarian tumors, 12 with uterine polypi, 6 with fibroid tumors of the uterus, and 1 case of elephantiasis of the external genitals, while in 6 cases no pathological condition could be found.

Dr. Kammerer[1] noted the subjective symptoms which induced a number of sterile women to seek for medical advice: Dysmenorrhœa, 59; menorrhagia and metrorrhagia, 57; scanty menses, 41; premature cessation of menses, 4; absence of menstruation, 2; retarded menses, 8; habitual miscarriage, 3; hysteria, 16; nervous headache, 3; vaginismus, 2; intercostal neuralgia, 1. The anatomical conditions found upon examination were:

A. *Anomalies of position.*—Retroversion, 20; anteversion, 18; dextroversion, 10; sinistroversion, 10; descensus, 8; prolapsus, 1. B. *Anomalies of uterine tissue.*—Anteflexion, 83; retroflexion, 71; hypertrophy of uterus, 65; atrophy of uterus, 3; atrophy of cervix, 1; infantile uterus, 2; small os, 24; stenosis of the entire cervical canal, 11; stricture of internal orifice, 35; fibrous tumors in walls of uterus, 10; carcinoma, 5; polypus, 6. C. *Catarrh.*—Of the whole 408 women, 234, or about seven-eighths, were affected with uterine catarrh. In the majority of these cases the catarrh was limited to the cervical canal, but where there was flexion of the body of the uterus, or stricture of the cervix, the dilated cavity of the body was the seat of active hypersecretion. D. *Affections of organs in proximity to the uterus.*—Acute or subacute perimetritis, or pelvi-peritonitis,

[1] Transactions of New York Academy of Medicine, vol. iii.

12; firm adhesions from previous attacks of peritonitis, 83; ovarian tumors, 14; peri-uterine tumors, with undefined seat, 7; gonorrhœa, 2; acute vaginitis, 1; pelvic abscess, 1.

Absence of Clitoris.—Although women may conceive who have an aversion for connection, yet frigidity is a general attendant on the congenital absence of the clitoris, and shows that there is something sufficiently wrong about the ovaries to render a woman barren, however well formed the organs of generation may otherwise appear. This was so written before very uncalled-for prominence was given to this subject, and I have no reason to alter it, though it has been lately stated that pregnancy has occurred after the removal of the clitoris. Rouband found that sterility coincided with the absence of the clitoris in four instances, and I have done so in three, where I consider sterility to be irremediable.

Unruptured Hymen.—A membranous hymen is generally susceptible of being dilated, but I have been consulted by women who have been married for years to husbands in the prime of life, and have found the hymen thick, flesh-like in color and appearance, and with an aperture large enough to let pass the menses, but not sufficiently so to afford a facile ingress for the semen: the funnel-like appearance of the parts implying habitual connection. In such cases, dilatation of the hymen would be tedious and painful; so it is better to divide it crucially with strong curved scissors, and, when the bleeding has abated, to touch the lips of the wounds with the solid nitrate of silver. Passing the finger into the vagina every second day, and occasionally touching the sores with the solution of nitrate of silver, will promote the object in view.

Partial Adhesion of the Labia.—This is of rare occurrence, the result of neglected inflammatory conditions of the labia in childhood; this infirmity may effectually prevent penetration, and requires the gradual separation of the labia by the knife, and careful dressing of the wounds to prevent their reunion by first intention.

Obliteration of the Vagina.—When this is caused by adhesive inflammation, after vaginitis, the obstruction may be cut through so as to permit conception and safe delivery, but when the obstruction occurs in the whole length of the vagina, converted into fibrous tissue, sterility may be deemed incurable, notwithstanding the case of Dr. Debrou, of Orleans, in which, by careful tunnelling, he not only gave a passage to the menses, but rendered possible the bringing of pregnancy to a fortunate conclusion.

Vaginismus.—This is a name given by Dr. M. Sims to a spasmodic sensitiveness of the vaginal mouth which precludes connection, and is solved by the inhalation of chloroform. I have very seldom known this state to exist, except as a symptom of vaginitis or of chronic metritis; and, like Scanzoni, by treating these complaints I have been able to cure

spasmodic stricture of the vagina. There is no doubt in my mind, that in some of these cases the man is more in fault than his mate, and that the vagina gets into a chronic state of irritability, because the husband has not sufficient vigor to effect an entrance into the vagina within a limited time after he has a right to do so.

Sometimes the spasm exists higher up in the vagina, as in a highly nervous patient who had been married five years without connection having been perfected. In this case the finger was stopped about two inches from the vulva, but after gentle, though forcible, pressure, I passed the stricture, and I ascertained that it was spasmodic, and a medium-sized speculum was introduced. There was some uterine inflammation, leading to the hope that its removal might solve the spasm, and I pushed the use of atropia and morphia, in suppositories, as far as it could be borne without symptoms of poisoning. The patient was much better when she left town, and she had a child a year afterward.

It occurred to Dr. M. Sims to treat vaginismus as a spasmodic stricture of the rectum; it is sometimes done by dividing the muscle and nerves of the vaginal sphincter. He claims to have often done this with favorable results, but I object that the operation is useless, and requires to be followed by the wearing a dilator in the vagina for three weeks. Dr. Gream showed us long ago that some of these cases can be effectually cured by the patient wearing, in the vagina, similarly shaped metal pessaries of gradually increased size. The instruments and their mode of action resemble those used for the treatment of certain strictures of the rectum. A less tedious and more effective plan of treatment is to place the patient under chloroform, then to introduce the two thumbs into the vagina back to back, and to forcibly separate them, so as to keep the vagina distended for a few minutes. Acting on the same principle, Dr. W. P. Hood, having placed his patient under chloroform, dilated the vagina by the expansion of a bivalve speculum, and allowed the instrument to remain there for five minutes. There was a slight feeling of discomfort for four or five days afterward. When this had subsided, the attempt at intercourse was renewed, and no difficulty was experienced in effecting it completely. Eleven months afterward the patient was confined of a son, and no further inconvenience occurred.

Absence of the Uterus.—When the womb cannot be felt by the finger examining the vagina and the rectum, and when the finger in the rectum feels the tip of the sound passed into the bladder without the interposition of any solid globular body, it is clear that the womb is absent and sterility absolute.

Undersized Womb.—Strange to say, I have only noticed this infirmity in large, tall women, in whom it would be least expected; one of them was cataleptic, and three others have occasional hysterical fits. Any one deformity in the sexual organs suggests the fear of the existence of some

other hidden anomaly, and in these cases there is most likely a congenital defect in the ovaries, so that sterility is the rule, but Mr. Lawson Tait [1] has shown us that, by patient and intelligent distention of the cervix by means of galvanic pessaries of gradually increased size, it is possible to increase the size of the cervix, to insure the right passage of the menstrual flow, and thereby to permit the ingress of the seminal fluid. It is related that a proper-sized cervix might, by superinvolution after childbirth, become too small, but I have never met with such a case.

Elongated Cervix.—This deformity until lately was confounded with prolapsus; it greatly diminishes the chances of conception, for, it stands to reason that they are greatest when, in connection, the opening of the penis is brought in close apposition with that of the womb. If the cervix, without being long enough to protrude beyond the vulva, is still long enough to interfere with connection, or with the patient's daily occupation, Huguier's operation, described at page 243, is quite justifiable, and still more so when a family is desired; but I protest against Dr. M. Sims' assertion, that when the cervix projects half an inch into the vagina it is very likely to induce sterility. As two-thirds of those who conceive are not otherwise formed, Dr. M. Sims' teaching would lead to an unwarrantable multiplication of operations.

Uterine Displacements.—The chances of pregnancy are proportionate to the amount of semen entering the womb; and, as with well-adapted organs, the orifices of the male urethra corresponds with the os uteri, the semen is, to a certain extent, injected into the cervical canal. Whenever this occurs, the collapse which follows connection solves uterine spasm, and dilates the os uteri so as to permit the entrance of a portion of the semen in which it bathes. This explains why we frequently find the womb misplaced when we are consulted for sterility, and why, in a few cases, Dr. M. Sims has found pessaries useful to permit impregnation, and he has continued their use till the fourth month of pregnancy, when miscarriage is less likely to occur.

Uterine Versions.—Anteversion and retroversion diminish the chances of pregnancy in proportion to the extent of the displacement, while a moderate amount of uterine prolapse rather favors conception; and as displacements of the womb are generally the result of chronic congestion, or of inflammation, the chances of pregnancy will be great or small in proportion as these conditions can or cannot be kept under. Cases have been published by Dr. Edis,[2] in which sterility, caused by considerable uterine retroversion, was removed by connection being practised "more ferarum," that is, in the genu-pectoral position.[3]

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[1] British Journal of Obstetric Medicine, vol. 1. [2] Lancet, March, 1877.

[3] A decree of nullity of marriage has lately been sought, on the plea that connection could only take place in that position. A woman about thirty, after living with her husband for four months, was deserted by him, and soon learnt that he was going

Uterine Flexions.—When the cervix is bent at right angles on the body of the womb, sterility is the frequent result of stricture at the point of flexion; nevertheless I have known pregnancy to occur under these conditions. Scanzoni mentions having seen it in three similar cases, and in two it cured the uterine malformation. Considerable anteflexion or retroflexion entails permanent congestion of the womb, and an unusual liability to inflammation, so the practitioner has both to straighten the womb and make it healthy. This seems to me the rational estimate of the influence of uterine flexions in the production of sterility, but I consider it a delusion on the part of a medical man to attribute sterility to a moderate amount of anteflexion or retroflexion, and I am sorry to be obliged to say that several of my patients have been told so by medical men.

Malformation of the Mouth of the Womb.—The closure of the mouth of the womb, whether due to accidental inflammation or to caustic, will, of course, both prevent the entrance of semen, and the exit of the menstrual flow, which wants an opening. When the cervix terminates as a cone, or "en cul de poule," as the French say, the semen glides off, and has less chance of entering the womb. I have repeatedly enabled women thus formed, and whose otherwise happy marriage had been fruitless, to have children, by making a bilateral slit, three-fourths of an inch long; nitrate of silver being freely applied to the cut surfaces. By thus preventing union of the wounds by first intention, the end of the cervix permanently takes a cup-like shape.

Stricture of the Cervical Canal.—This is often the sole cause of sterility; it is obvious that the semen must pass with difficulty through a canal that does not readily admit a small bougie, and that congestion, or slight inflammation of the membrane lining the cervix, full of thick, glutinous secretions, will effectually prohibit its entrance. In some of

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to sue for a divorce, and Dr. John Brown, of Rochester, sent her to me. I noticed that she had a shuffling walk, and I found that the heads of both femurs were out of joint, and falsely articulated to the ilia, above the rim of the acetabula. This woman could sit down, but she was unable to separate the thighs, and I could not pass my fist between her two knees. The parts appeared as if connection had frequently taken place, and the sexual organs were healthy. She said that her husband, finding it impossible to cohabit in the usual way, had repeatedly had connection "more ferarum." The cause came on for trial, before Judge Amphlett, in April, 1877. It was contended, on the part of the husband, that he ought not to be obliged to have connection in so grossly immoral a fashion. It was rebutted, on the part of the wife, that the posture she was obliged to take was preferred by some married people, and recommended to cure sterility in certain causes of uterine deformity. The judge dismissed the suit; an appeal was put in, but the husband soon after died. Two thousand years ago, Lucretius wrote:—

"Et quibus ipsa modis tractetur blanda voluptas, id quoque permagni refert; nam more ferarum quadrupedumque magis ritu plerumque putantur concipere uxores, quia sic loca sumere possunt, pectoribus positis, sublatis semina lumbis." IV. 1263–1267.

the cases of supposed obstructive dysmenorrhœa, in which I have been asked to sanction hysterotomy, recommended by others, I have found the stricture to depend on inflammatory thickening of the lining membrane of the cervix, and, by curing this, the patients have soon become pregnant without an operation. Neither can it be doubted that the circular fibres of the cervix are liable to spasm, like any other circular muscles, and may like them be effectually treated without a surgical operation; so it is the evident duty of the surgeon to defer operative measures until antiphlogistic and antispasmodic treatment has been fairly tried, and, above all, opium and belladonna suppositories. The gentlemen who so frequently slit up the cervix for sterility, have never stated the exact breadth of the cervical canal they deem required for the ascent of spermatozoa. I have elsewhere[1] said, that "I am occasionally consulted by women who are barren, and who have been advised to have the womb divided, although I was able to introduce with ease, into the cervical canal, a No. 4 wax bougie or the uterine sound. I should like to know who would venture to assert that this width of canal is insufficient for microscopical animalculæ to pass through, and if it does not border on the absurd to seek to give a wider berth to spermatozoa by the knife or sponge-tents, in the hope of curing sterility? The frequency of conception in young women soon after marriage, is well known to obstetric practitioners; and I am convinced that it would have been found very difficult, in many of these women, to have introduced the uterine sound into the womb previous to conception. At all events, I have often found it difficult to introduce a No. 2 or 3 wax bougie into the virgin womb; nevertheless, pregnancy has subsequently taken place without the adoption of measures to widen the cervical canal."

Many cases are on record in which pregnancy occurred when penetration was impossible. I have myself seen three, in which a fleshy hymen would only admit the uterine-sound; and these rare cases certainly confirm the hitherto received belief, that microscopic animalculæ do not require the cervical canal to be wide enough for the forefinger to pass through. When women have been long married and children are desired, and nothing else is found amiss but the impossibility of passing an ordinary uterine sound, it is justifiable to dilate the cervix, and I give this standard of width as a guide of conduct in such cases, because the eminent men who praise hysterotomy as an infallible and safe cure for dysmenorrhœa or sterility, have not stated what they consider to be the right width for the cervical canal.

Dr. Mathews Duncan practised for a long time in the same field of observation as Simpson, and he has expressed his conviction that Simp-

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[1] Extreme Surgical Tendencies. Transactions of the Obstetrical Society of London, vol. viii.

son made many more women sterile than fruitful by dividing the cervix. On the contrary, the tenor of Dr. M. Sims' work [1] is to represent pregnancy as insured by slitting up the cervix, and the assertion that he had done so five hundred times in the space of two years in the Women's Hospital of New York, shows to what an extent he carried the practice. So much I must say, in order to prevent others following, in this respect, the example of so eminent a surgeon, and who may not have become aware that, with most praiseworthy candor, he confessed at the Oxford Meeting of the British Medical Association that he had much too frequently performed this operation. In the paper that he read on that occasion, he laid down rules that are instructive, but scarcely suitable to the tone of British practice. He considers that, before subjecting women to operations for the cure of sterility, it is first necessary to ascertain that spermatozoa are actually present in the spermatic fluid, and for this purpose Dr. M. Sims examines the patient about four hours after connection, and then he tests with the microscope a drop of the vaginal secretion, to ascertain whether there be spermatozoa to be detected, either alive or dead. If living spermatozoa are found in a drop of mucus removed from the inside of the cervix, he concludes that no slitting of the womb is requisite, whatever be its shape or condition. If, four hours after connection, only dead spermatozoa are found in the drop of cervical mucus, it is evident that the cure of sterility in such a case is to be attempted not by slitting up the cervix, but by curing the internal metritis, the acrid secretions of which speedily kill the spermatozoa.

Polypi.—Even very small polypoid growths in the cervical canal, by obstructing its area, have been shown to be the cause of sterility, by fecundation following quickly on their removal. Fibroids, when small, may close the cervical canal, but when they fill the uterus they do not prevent conception, however much they may impede delivery.

Inflammation of the Womb.—This is the most frequent source of sterility, for the germ cannot easily take root on the diseased surface of the lining membrane of the body of the womb when it exfoliates, or is inflamed, or is poisoned by syphilis and by the *quid ignotum* of gonorrhœa. Inflammation of the lining membrane of the neck of the womb often so increases the glutinous secretion of its follicles, that it presents an effectual barrier to the semen, and its admission is greatly obstructed if stricture of the womb has been the result of hypertrophy or chronic inflammation. Neither should it be forgotten, that if the spermatozoa can live in the muco-purulent secretions, they are killed by the acrid secretions of internal metritis, and by the vaginal mucus when it is too acid.

Syphilis.—If this most destructive enemy of human life does not blight the germ in the ovaries, nor prevent its attachment to the womb,

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[1] Notes of Sterility.

it often causes miscarriages or premature confinement, or the birth of a contaminated offspring, so the practitioner should be wide awake to what looks suspicious, closely question the husband, and, if necessary, submit both husband and wife to such antisyphilitic treatment as may insure the life of future children. It has only lately been well established that gonorrhœa may extend to the lining membrane of the womb and to the oviducts, thus causing pelvi-peritonitis, and insuring sterility by a combination of morbid processes; but for further information on this subject I refer the reader to the well-known works of Mr. Acton and Mr. Henry Lee.

Salpingitis.—We only know the pathological anatomy of inflammation of the oviducts: the occasional obliteration of the uterine ends of these tubes, and the frequent obturation of their distal ends, show their liability to inflammation, but if moderate it passes unperceived, and if it be severe enough to determine a collection of pus, it is mistaken for ovaritis. The oviducts are sometimes obstructed by thick mucus; and it was suggested, some years ago, to deobstruct them by means of a small whalebone bougie introduced into the womb through a small silver catheter, but the proposal does not require consideration, and we must be content to know that sometimes sterility is caused by an irremediable obstruction of the oviducts.

Absence of Ovaries.—This would imply absolute sterility; but the ovaries, like the oviducts, are often beyond the reach of the finger, unless much increased in size, and their absence can only be inferred from that of menstruation, and from a more masculine appearance of a woman. These remarks apply to the ovaries when their structure is transformed into fibrous, tuberculous, or bony tissue.

Ovaritis and Peritonitis.—It is now admitted that, like dentition, ovulation may become inflammatory, and greatly limit the fertility of woman. It is known that morbid ovulation often leads to pelvi-peritonitis, and causes sterility by covering the ovary with false membranes, through which the ovules cannot possibly pass. These facts have been amply confirmed, and the importance of pelvi-peritonitis in relation to sterility is fully admitted. When treating dysmenorrhœa, we should look out for more or less permanent pain in the ovarian regions, pain increased by pressure, and persisting for some days after menstruation. Six or eight leeches may then be applied to the painful spot—better still, four to the cervix, followed up by mercurial inunctions, warm hip-baths, gentle purgatives, bromide of potassium, and rest.

If pelvi-peritonitis often escapes attention in the living, it is a well-recognized cause of sterility in the dissecting-room, where it is common to find the distal end of the oviducts obliterated by false membranes, or the tubes so strapped down by adventitious bands as to prevent the instinctive application of their funnel to that portion of the ovary from

which the ripe ovule is about to drop. The ovaries themselves may be so embedded in false membranes that the ovules are completely locked up. These conditions evidently point to absolute sterility, but they often escape detection, and must be inferred from menstruation being often accompanied by very severe and long-continued pain, or from the knowledge that a sharp attack of pelvic inflammation followed miscarriage on pregnancy.

CHAPTER XIV.

PREVENTION.

PREDICTION is the test of science. Uterine affections may be predicted in young women in whom menstruation is habitually bad, if, during that time, they are too long exposed to cold, wet, fatigue, and excitement. Uterine affections may be predicted in married women if menstruation has been previously morbid, if they miscarry repeatedly, bring forth too rapidly, and if they overtax their strength after abortion and parturition. A beneficent Providence never intended women to suffer so much as they do, for two-thirds of the diseases of the reproductive organs are preventible complaints. If women come of an unhealthy stock, and are injudiciously brought up; if the menstrual function be recklessly interfered with; if women are imprudently married, miscarriages made light of, and insufficient time allowed for the womb to recover itself after the tremendous labor of gestation and parturition, they must expect to suffer from the various forms of uterine disease. The efforts of medical men have always been directed as much to the prevention of diseases as to their cure, and, although I know that there is little use our fighting against stupidity, ignorance, and passion, I will try to recapitulate the best means of preventing the most frequent diseases of women—a fit termination to a practical work. Medical men should bear in mind the three great sources of diseases of the reproductive organs. 1st, undue and intempestive menstrual orgasm; 2d, the addition of puerperal traumatism to menstrual congestion; and 3d, defective involution, which opens out a wider field for morbid action, and is the workshop of uterine pathology. Diseases of the reproductive organs can be generally prevented:

First.—By a judicious system of education.

Second.—By careful management of the menstrual function.

Third.—By marriage, and by a right understanding and performance of the duties of married life.

Fourth.—By the careful management of pregnancy, miscarriage, parturition, and lactation.

1. A JUDICIOUS SYSTEM OF EDUCATION.—The best education for girls is that given at home by a sensible mother, who, while improving the mind, looks well after the body, and who, while supporting it with plenty of plain food, so fills up the present with a variety of wholesome studies

and amusements, that the mind has no time to dream of the future. The damage done by pampering children with made dishes cannot be demonstrated, but is no less certain, and its influence on the precocious development of girls is, to a certain extent, made apparent by the lament of Stonehenge, that, owing to the high condition in which they are kept, the two-year old thoroughbred fillies prematurely succumb to sexual influences. A very commendable portion of our English bringing up of girls, is the Spartan importance attached to exercise in every shape: walking, riding, rowing, shooting, and skating. The medical reports of the "Hospital des Enfants," in Paris, prove that diseases of the bones and of the articulations have become much less frequent and less severe since the girls have been daily exercised in the gymnasium attached to that institution. In advocating gymnastics for girls and young women, I mean a well-devised system of muscular movements, such as are practised in some gymnasia, not the high jumping and lofty climbing suitable for sailors and firemen. The calisthenic exercises that are taught by dancing-masters, are a substitute for these gymnastic exercises; the instinctive craving for dancing in young women clearly shows the great utility of that and other rhythmic muscular movements. Men and boys, with twopence in their pocket, can have a swimming-bath in our metropolitan baths; but women, however rich, must go to Brighton to enjoy the luxury. There are many thousands of young ladies to whom it would be both useful and agreeable to have a good swim, once or oftener in the week, and a large, handsome swimming-bath might as easily be made in London as any other building. Of all this I have fully treated in another work.[1]

2. Careful Management of the Menstrual Function.—The knowledge that menstruation is a natural function does mischief; for those who do not suffer during menstruation, will not submit to any restraint being placed upon their usual liberty of action; and those who suffer much will not seek advice, supposing that it is incumbent on them to bear the pain of a natural function. It cannot be too strongly impressed upon the mind of all young women from the first period of menstruation that, however well they may feel, *they should do less than usual* at that time. Those who can take care of themselves should avoid fatigue and over-excitement, and, therefore, long walks, shopping, riding, dancing, parties, and theatres. Though it has been shown that cold applications do not always check the menstrual flow, women should be careful of getting wet, of remaining in draughts, of taking iced and cold drinks, of sitting in cold water, and of putting on damp linen, for they often suppress the menstrual flow and congest the womb. Women should be brought up to know that they want medical advice when the menstrual flow is too scanty, too abundant, too painful, or too frequent.

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[1] Elements of Health and Principles of Female Hygiene.

3. MARRIAGE.—Unless, in the absence of sexual desires, women are called to a conventual life by very strong religious feelings, I believe celibacy to be a very fruitful source of disease. Life in our present state of civilization is full of conditions and circumstances that intensify a natural instinct; and if it does not receive its legitimate satisfaction, women of strong passions are placed in a permanent state of conflict, which causes an irritable state of the sexual organs, whence arises a struggle between conscience and instinct. Some seek relief in imitating what is denied them, others achieve a victory over passion, but the victory may damage the nervous system. Despondency at having to renew the fight, settled irritability at being less fortunate than others, causes temper, and an endless variety of hysterical symptoms. This is what I have frequently observed; and sometimes a virtuous woman, in a state of sub-delirium, will blaspheme against friends, relations, social arrangements, and religion, without retaining the knowledge of having done so when she becomes herself again. Marriage is also the best means of maintaining a healthy tone of mind after the change of life, for unless an unmarried woman be animated by a true spirit of religion, she is apt to change from her former pleasant self, and to become bitter and overbearing—particularly so if she has been the victim of some man's treachery. Wrapped then in her own grievance, she loses all sympathy for others, and may even come to think it commendable to prevent their tasting a happiness denied to herself.

Although a preventive of uterine disease, marriage may, nevertheless, produce it in various ways if not judiciously ordered. Marriage should not be contracted either too early or too late in life; by too early, I mean before twenty-one, until which time the female system has not acquired its full development, nor the bones their perfect solidity. I have traced the influence of early marriage in many cases of uterine and inflammatory affections; and there will be also greater chance of miscarriages when the processes of reproduction are confided to immature organs. Indeed, it is not uncommon for women married at seventeen to begin by several miscarriages, and only to bear children on attaining the age at which it would have been prudent for them to marry. Late marriages are less frequent and less fatal; but I can corroborate B. de Boismont's assertion, that whenever sexual impulse is imperatively felt at the change of life, some morbid ovario-uterine condition will be found to explain it in most cases. A patient of mine who had never had a day's illness, married at fifty, after menstruation had become very irregular; she was laid up with flooding the day after her wedding, and when that was checked, she went out of her mind for six months. Another lady, who looked and felt perfectly well, married at forty-eight, and flooding set in two days after her wedding-day. In this case marriage unmasked uterine cancer, which had not been suspected, and the patient died within the year. I

lately prevented a lady from marrying at fifty, on account of a large unulcerated and painless cancer of the womb, with which she may live two or three years, whereas marriage would have shortened her life. These instances are sufficient to show how imprudent it is to marry at the change of life without the sanction of a medical opinion. Cattle are bred with great care upon physiological principles, while fancy, money, and family interests govern marriage, so the human race is full of tendencies to disease. Children are born insane, so that their parents may have £5,000 a year; and they are born syphilitic, because the husband will not take the trouble to be cured before marriage. There is no hope of marriage being ever founded on fair health prospects for children, so all the profession can do is to trace a judicious after-marriage line of conduct.

The effects of marriage on the nervous system of women, and on their sexual organs, are often severe, and it would be reasonable that for a few months afterward women kept quiet, and lived in a comparative state of seclusion, instead of striving to sow within themselves as many seeds as possible of future mischief. The succession of visits and gaieties in honor of the bride, the sight-seeing and other fatigues of continental travelling, are well calculated to bring on early miscarriage and the suppression of menstruation, which lead to chronic disease. Conception frequently takes place; it checks the menstrual flow; no care is taken to avoid over-excitement, over-fatigue, purgatives, or connection; and after a few days there is an abundant prolonged discharge, which is supposed to be menstruation, but is really a miscarriage, which cannot be often repeated without leading to serious mischief. Both married and single should be made aware that if they have once had a severe attack of uterine inflammation, nothing is more likely to rekindle it than menstrual congestion. A young lady who had previously suffered from uterine disease, married, and then started on a riding tour through the West of England. She was soon invalided, menstruation becoming more and more scanty, and nervous symptoms worse and worse. After two years of illness I found the cervix hypertrophied, and through it I had to cut a passage for the menstrual flow. Another young lady went to Italy for her wedding trip, and was laid up in Rome with inflammation of the womb and of the vagina. There had been already three years of misery when I was consulted; it took a year to get her well, but she has had no family. It will be seen at page 76 that this subject has engaged the attention of foreign observers.

During the last years of his life, my friend Mr. Acton saw a great deal of the worst side of human nature, and he used to say that it was married folks who were most guilty of sexual excesses. Whether or not this be the case, too frequent connection causes uterine inflammation when the pelvis is shallow and the vagina short, for this entails more or less contusion of the womb, and I have certainly seen the cure of ulceration of the womb protracted by the continuance of matrimonial habits,

particularly when connection was painful. Young married women have repeatedly told me they had been previously advised to persevere, notwithstanding the painfulness of connection, and that abstaining for a time would only render it more painful when resumed. Such advice should only be given after a careful examination, which may lead to the discovery of acute inflammation of the womb. In that case, one might as well tell a man with a broken leg that rest was useless. When the *body* of the womb is inflamed, connection is painful, and often brings on a relapse; but when the cervix is alone inflamed, I am much less particular on this point than when I began practice, having observed that, in chronic inflammation, intercourse is often rather beneficial than otherwise in patients of strong temperament, and in those subject to hysteria. It is said that, by connection, an undue excitement is given to an organ already too excited; but one must always remember that a natural appetite is under consideration, and that, insomuch as a diseased stomach is made worse by the want or by the insufficiency of food, so some diseases of the reproductive organs may be made worse by the absence of their accustomed stimulus. Thus I have seen women who suffered so much from chronic uterine inflammation that I should have been very sorry to have sanctioned their marriage, certainly improved by it. One of my patients suffered much from hysteralgia on the loss of her husband: everything was tried without success, and, after many years of suffering, she married again, when a marked improvement immediately followed, and she recovered in a few weeks. I have also repeatedly observed that widows who were subject to relapses of ovarian congestion and uterine ulceration lose all this tendency to relapse after remarriage. If it were said that these were mere instances of unsatisfied sexual orgasm, I should mention that another patient, who suffers severely from ovaritis and internal metritis, with the neck of the womb soft, swollen, and exquisitely sensitive to the finger, has nevertheless no pain on connection; it does not make her worse, greatly relieves many of her distressing nervous symptoms, and is often followed by seven or eight hours' sound sleep; so that sometimes strong passions warrant connection, notwithstanding rather acute uterine disease. Although marriage be dangerous in confirmed chlorosis, it may act like a charm for the cure of constitutional debility, when this does not depend on organic disease, for reasons specified in the chapter on Hygiene.

4. Pregnancy.—Pregnancy often cures those little understood diseases of the ovaries to which I have often drawn attention as ovarian irritability and subacute ovaritis. It cures them by reducing these organs to a state of physiological inactivity for nine months, and for any further period allotted to lactation. As pregnancy gradually softens the firm tissues of the healthy cervix, so it often softens the neck of the womb when enlarged and hardened by hypertrophy or chronic inflamma-

tion. This has been denied by Duparque and Lisfranc; but experience teaches me that there is a fair hope of densely-organized cervical plasma being softened by the process of gestation, and gradually swept away by a rapid progress of absorption similar to that which so speedily reduces the enormous volume of the gravid womb. This is less surprising than the statement of Scanzoni, that he found a fibrous tumor of the womb as large as a man's head, which he had been unsuccessfully treating for eleven years, vanish entirely, without bodily expulsion, six weeks after delivery. A similar case is mentioned by Dr. M. Sims. Such cases can only be doubted by those who have not felt the singular amount of softening and infiltration to which such tumors are liable during pregnancy.

Once in the family way, women seldom see a doctor, and get through pregnancy in a higgledy-piggledy way. They make too little difference in their habits of life, and, if some do so with impunity, many miscarry from over-exertion and over-excitement. The way to prevent miscarriages is to lead a more quiet life, particularly during those days of each successive month, when, under other circumstances, they would menstruate; and to abstain during those days, not only from long walks and parties, but also from sexual intercourse.

It requires the knowledge of a medical man to manage pregnancy, in order to insure the maintenance of sufficient reserve force when the system shall be called upon to reconstruct the womb; and I think Dr. Bassett[1] is right in urging that many women want more treatment than they usually get during pregnancy; for they may want bleeding, diuretics, oftener tonics, and, above all, iron. The purulent or bloody vaginal secretions of pregnancy are sometimes most debilitating. They depend on varicose ulceration of the cervix; the exaggeration of a high state of hyperæmia during the last months of pregnancy, which state is considered to be physiological by Hildebrandt. Those who object to medical treatment during pregnancy, and to the expediting of labor, on the plea of interference with natural functions, should bear in mind that we have to do with women considerably modified by hereditary tendencies, and by the bad hygienic habits that always wait on a high state of civilization. Some of the women we attend have never done a hard day's work till labor pains set in. It is also clear to me, that whatever prolongs labor and exhausts strength augments the chances of defective involution. It is, moreover, fair to conclude that too long-continued contraction of the uterine muscle leaves it half paralyzed after delivery, and that its over-strained muscular fibres can no more properly contract than can the muscular fibres of the over-distended bladder after the urine is removed. I therefore look on the present tendency to shorten labor by instrumental interference, so soon as it can be safely done, as well calcu-

[1] Transactions of the Obstetrical Society of London, vol. xvi.

lated to prevent involution becoming defective; not that I mean to advise the frequent use of the long forceps when the head is still at the brim, but low forceps operations, when, from uterine inertia, the head remains low down in the pelvis. The more frequent use of the forceps must, however, cause more bruising and tearing of the cervix, and these conditions will require better looking after than they have hitherto received. The giving a full dose of ergot as the head emerges, and Credé's method of removing the placenta, tend to prevent post-partum hemorrhage, and give the womb a proper shape, by making its muscular fibres fully contract in the right direction; however firmly it may at first contract, the womb soon relaxes; and it is in the midst of the fast-decaying elements of worn-out muscular tissue that a new womb is built up, just as in dissolving views we see new forms arise in the midst of old structures that rapidly fade away. It can, therefore, be of no use to apply firm pressure to the womb after the first few hours of delivery, and a bandage then should have no other object than to give the abdominal viscera that support they cannot get from relaxed abdominal walls. Should there be a previous history of some uterine distortion, attention should be given to the patient's posture in bed. She should be told to lie as much as possible on her back if the womb had previously been anteverted or anteflexed; and, on the contrary, to lie as much as possible on the face and stomach if, as is more frequently the case, the womb had been retroverted or retroflexed. I have seen the plan successful in three cases of marked anteversion, in two of retroversion, and in one of anteflexion. Scanzoni mentions three cases of anteflexion cured by pregnancy; and Dr. Goupil states that he distinctly made out retroflexion of the womb in two women, and that, on examining them carefully two or three months after parturition, there was no trace of retroflexion. Are we right in scrupulously keeping women on their backs for many days after confinement? Would not the gentle pressure of conterminous organs on the enlarged womb, combined with the varied play of the abdominal muscles, not only prevent the stagnation of decomposing fluids within the womb, but give it a better chance of growing to a proper shape and size than it does under the plan generally adopted in the treatment of puerperality? Such is the teaching of Dr. Goodell,[1] founded on his practice at the "Preston Retreat," near Philadelphia. The patient is confined on a delivery bed, and wheeled back to her bed; the very next day she sits in her chair, once or twice a day, while her bed is being made. On the fifth day she gets up, dresses herself, and does what she likes. While admiring the boldness of this new way of managing puerperality, I beg to reserve my opinion respecting it till it has been tried on our own women, for there are a host of cases on record in which very early getting up was followed by

[1] Treatment of the Puerperal Diseases at the Preston Retreat. Philadelphia, 1874.

the sudden coming on of some serious post-partum disease, prolapsus, metritis, and peritonitis. I should also like to know the effect of Dr. Goodell's plan on the position of the womb after recovery. Leaving this important question to be settled by future observers, I shall now say a few words on another too much neglected cause of diseases of the womb —defective involution—to which I have drawn attention elsewhere.[1]

Defective Involution.—The wonderful process of uterine involution, by which the weight of the womb is to be brought down from one pound six ounces to two ounces, is so little known, that the best authorities are at variance respecting the time required to bring it about. Smellie estimated it at three weeks, Scanzoni says it requires sixteen. Most gynecologists think two months, in which case the muscular structure of the womb would be renewed about the time when the lining membrane of the womb has been reproduced. With regard to uterine involution after abortion, nothing is known, except that its progress is slower after premature delivery. For a description of the anatomical phenomena of normal uterine involution, I refer to Dr. Arthur Farre's article on the Uterus in "Todd's Cyclopædia," and for a study of its rate of progress, to a paper by Dr. Serdukoff.[2] For my present purpose, it will suffice to remind the reader that, although the contraction of muscular fibre may help the process, uterine involution depends on the conversion into fatty products of no longer wanted muscular tissue, and on the removal of these products by the blood, while gradually a new womb is reconstructed upon the original pattern. Uterine involution should partake of the slowness, the steadiness, and the painlessness of chemico-vital processes, and, instead of being promoted, it is interfered with by after-pains, the spasms and cramps of the puerperal womb. This normal rate of involution may be exchanged for one so rapid that Schrœder has seen it set up fever, and powerful to remove most of the muscular tissue, so that the walls of the womb were found no thicker than those of the intestine; indeed, superinvolution almost completely removed the womb in a patient of Dr. Whitehead,[3] aged thirty-nine, and who had borne four children. This *superinvolution* of the womb is so rare that I have not met with it, whereas *defective uterine involution*, or *subinvolution*, is of frequent occurrence.

The time allotted to uterine involution may be divided into two periods. At first there is a rapid decrease in the size of the womb, although during the first few days after labor there be no parallel decrease of weight. This period may be roughly estimated at a fortnight, during which defective involution is caused by the serious diseases that obstetricians have then to contend with; and they have recognized this defective

[1] Lancet, July, 1876.

[2] Contributions to the Determination of the Uterus After Delivery. Edinburgh Medical Journal, vol. xx., May, 1875.

[3] British Medical Journal, 1872.

involution as a cause of post-partum flooding, and of that absorption of putrid matter which leads to puerperal lymphangitis and phlebitis. To this period I refer the cases that have chiefly struck Dr. Arthur Farre, who describes "the uterus as remaining undiminished in bulk, its fibre uncontracted, and its tissues unrenovated for several weeks or months after labor, the soft flabby organ being easily felt above the pubes, reaching sometimes as high as the umbilicus; while its cavity, tested by the uterine sound, may measure several inches in depth." I have only met the womb as thus described during the first fortnight of puerperality. After that, and more particularly after menstruation has occurred, it is gathered up into a more or less consistent and enlarged ovoid. Some of the causes that interrupt involution in this first period do so in the second period, which may be said to extend over six weeks. I have already mentioned premature labor as a cause of defective involution; the undue prolongation of labor is a much more potent cause, and my assertions as to this, have been confirmed by Dr. Goodell and by Dr. Serdukoff. Involution proceeds at a slower rate in women confined during the last decade of reproductive life. Every variety of puerperal fever checks uterine involution, even if the womb be not faulty. Any kind of uterine traumatism and inflammation checks uterine involution, and the check is proportionate to the extent of the lesion. Lastly, defective involution may occur without apparent cause, and is then attributed to something wrong in the innervation of the womb itself, or to an all-pervading general state of debility. A vaginal examination gives the impression of the womb being larger than it ought to be, and its size may be more accurately estimated by a rectal examination. A still more correct measurement may be taken by means of a wax bougie, for, as in a womb of the right size, it should be brought up at a depth of two and one-half inches, if, after parturition, the bougie measures from three and one-half to five inches, the excess of length must be attributed to an enlargement of the body of the womb, unless it can be explained by unnatural elongation of the cervix.

Debility should be the first thought of the practitioner as a cause of defective involution, for the early exhibition of some preparation of iron often visibly improves the appearance of the patient, and by dispelling uterine congestion it promotes involution. When, however, strength does not follow the use of tonics, and when, a few weeks after delivery, the patient is more or less invalided, and complains of bearing-down sensations, pelvic distress, and muco-purulent or bloody discharges, their origin should be ascertained by a carefully made examination. If, on the contrary, the beginnings of uterine diseases are overlooked, they take root in an imperfectly involuted womb, and the patient is likely to become a confirmed invalid, with a subsequent history of deranged menstruations, miscarriages, premature deliveries, and bad recoveries. I often

trace long years of perfectly preventable misery to the injudicious management of a bad getting up, so I consider defective involution to be most frequently caused by some form of post-partum uterine disease. The frequency of inflammation under a mild form is admitted by many pathologists, and by Dr. Fordyce Barker in his work on Puerperal Fever. Still more recently, Dr. Serdukoff has satisfied himself, by clinical observation, that involution is checked by metritis in proportion to its intensity; and sometimes by endometritis, particularly when it has been necessary to peel away the placenta. In such a case an amount of laceration that would have soon healed up, if the womb could have properly contracted, may become a serious matter if, in an unhealthy woman, the womb remain subinvoluted. Most frequently, however, involution is checked by the bruising and laceration of the cervix uteri. This often-repeated statement of Dr. H. Bennet's, and of mine, has been amply confirmed recently by the late Dr. Phillips, who, in recording his experience at Guy's Hospital, estimated the frequency of cervical laceration at 10 per cent. of ordinary labors, and as the rule in tedious labor; Dr. Atthill, of Dublin, also admits cervical laceration as the frequently overlooked result of labor. No doubt most of these lacerations heal by first intention in healthy women, but when they are unhealthy, or the rent extensive, as after the unskilful use of instruments, the sore festers and becomes a centre of congestion of inflammation, which arrests involution. To check such lesions in their earliest stage, the best way is, after every case of labor, to suppose the existence of traumatism in the cervix and vagina, and to order vaginal injections to be made as soon as the lochia should cease to be red. I know of no better injection than a solution of acetate of lead, one drachm to the pint of tepid water. There is scant likelihood of such an injection entering the uterus, and the chance of the occurrence of the uterine tormina that occasionally follow the use of injections, or the chance of the patient's awkwardness in the use of the instrument, is as nothing compared to the benefits to be derived from the practice. I recommend the practice as a matter of routine, without any previous examination of the patient, as not calculated to do harm, even if it be not wanted. If, three or four weeks after confinement, a bad getting up is notable for a vaginal discharge, bloody or muco-purulent, the patient should be carefully examined, and it will be found that uterine involution is being checked by some more serious lesion than congestion or subacute inflammation of the cervical mucous membranes. When these lesions are properly treated in the first months of puerperality, suspended involution is resumed, and the womb shrinks to its right size; not so when these lesions have been overlooked, and allowed to proceed unchecked for a year or longer, for surgical treatment of the cervix will only be partially successful when the body of the womb remains too large. Indeed I sometimes infer the presence of defective involution of

the body of the womb, from the fact of good surgical treatment of the cervix having been only partially effectual to restore health, as in the following case.

Mrs. C —— is a well-proportioned lady of twenty-six, who had always enjoyed good health, notwithstanding tubercular family antecedents. She married at twenty-two, was delivered by the forceps eleven months afterward, and made a good recovery. Thirteen months after the birth of the first child, she was confined of a second, after two hours' labor. There were no marked pelvic symptoms while she kept her bed, but as soon as she began to try to get about, she suffered much from bearing-down pains, back pain, vaginismus, muco-purulent discharges, nervousness, and general debility, which precluded nursing. This was found by a provincial practitioner to depend on inflammation and ulceration of the cervix and vagina, and he treated her very judiciously during seven months, and then I was consulted. I found the patient better in every way; the cervix was of the average size, and bore the impress of a recent application of potassa fusa cum calce. The body of the womb was slightly retroverted, and seemed about twice its right size to the finger in the vagina. The womb had a regular outline, was painless to pressure, and the wax bougie easily entered the uterus to a depth of over four inches. In this case there was no record of red or brown vaginal discharges, nor of the acrid serous discharge of internal metritis; so I considered it a case of defective involution, caused by cervical inflammation. I first depleted the womb by leaving in contact with the sore surface a dossil of cotton-wool soaked in glycerine, and I afterward well swabbed the cervix three times a week with tincture of iodine. Alum and zinc injections were prescribed; large doses of bromide of potassium were given at first, and then strychnine and iron. After six weeks of this treatment the womb appeared healthy; the wax bougie measured three inches instead of four; strength had been gained, and a year after she left town I heard that she continued well.

When delivery is followed by a long-continued state of great debility, unattended by pelvic pain or by any characteristic vaginal discharge, a practitioner may well be excused for not having examined his patient, but the inability of explaining this chronic exhaustion by diarrhœa, or expectoration, or by profuse sweats, should lead him to suspect that, as the exhaustion originated in delivery, it might be kept up by something amiss in the womb. This long-continued exhaustion is sometimes caused, or at least is accompanied by, uncomplicated defective uterine involution, as in the following case.

Mrs. W—— is a well-formed, healthy-looking lady, and is now twenty-six years of age. She had enjoyed good health, and married at twenty-three. She had a child nine months afterward, then a severe attack of uterine inflammation, and, before recovering from this, she became preg-

nant two months after delivery—for the second child was born eleven months after the first. She went on well, and without a bad symptom till it was time to leave the bed, and then she found she was too weak to stand, and, during the following ten months, her time was divided between bed and sofa, and she was not able to nurse. She was not hysterical in any sense of the word; she wished to be up and doing, but she could not walk or stand, and the debility persisted, although there was nothing tangibly wrong about her. She slept well, took a fair amount of food and wine, had judicious tonics, and did not lose flesh. I found a large, flabby cervix, which admitted the first phalanx of the indicator; the body of the womb was regularly enlarged, painless to pressure, and moderately retroflexed. The wax bougie entered to the depth of over four inches. What I could see of the lining membrane of the cervix was very red. That was the only thing I found, in addition to a very patulous os uteri, and defective involution; probably the entire lining membrane of the womb was as red as the part I could see, but I rather considered this to be a congestive state, caused by defective involution, than the fag end of endometritis, of which there had been no symptoms. Twenty months of incessant labor, either physiological or morbid, was too much for the womb in this case. Its tissues were paralyzed, and the defectively involuted womb reacted unfavorably on the spinal cord for about a year. In this case I freely used, twice a week, a strong solution of nitrate of silver inside and outside of the cervix, with the object of starting contraction by a local irritant. The patient was ordered alum and zinc injections, bromide of potassium at night, sulphate of quinine and extract of nux vomica in pills, and a stimulant embrocation to the abdomen. I followed this treatment for about a month without observing any amendment, till one day I noticed that the os uteri had very properly and firmly contracted. This was an indication that the whole body of the womb was waking up to healthier action, for the patient began to mend from that time, and gradually recovered the power of walking. When she left town, the cervix had its right consistency, the body of the womb was smaller, and the wax bougie measured about an inch less than it did three months before. Four months after she left town Dr. McClintock found the womb in a healthy condition, and soon after she again became pregnant.

The well-known and unexpected danger attending last confinements in women about forty years of age is often caused by defective involution, from failing of strength, both of the womb and of the system. In most cases, however, defective involution, to become apparent, requires to be associated with some other pathological condition; by itself it is seldom a disease, and much more frequently the enlargement of the area in which a disease may originate, be it congestion, inflammation, ulceration, a rough or mammillated surface, causing metrorrhagia, a polypoid,

or other growths. Moreover, defective involution not only magnifies the area of uterine disease, but intensifies it and promotes relapses. The larger the womb the greater its blood-supply, the more eccentric its blood-fluctuations, and the more difficult it will be to cure disease grafted on such a womb. The somewhat independent life and pathology of the neck and of the body of the womb, is sometimes shown in the process of uterine involution, for the cervix may have nearly recovered its normal size and consistency, while the body may still remain large and flabby. Thus a large soft bag, being poised on a cervix already stiffened to its usual consistency, is ready to yield to the laws of gravitation, and to bend at their point of junction in obedience to slight pressure. This accounts for flexions that follow parturition, and in some cases there may be a more rapid rate of post-partum fatty degeneration at the junction of the body and cervix. The healthy vagina is a pillar of support to the womb, and there is often a coincidence of cause and effect between the baggy, widely-distended vagina and uterine displacements, versions as well as prolapse.

Treatment.—In all cases of defective involution, with or without cervical inflammation, I give the usual doses of iron and strychnia, to act on the womb through the system, and also ergot, although it is difficult to understand that it can act as well on the womb in a state of mutation as on the uterus in its ordinary state of nutrition-stability. It follows from what I have stated of the possible separate rate of involution of the cervix and of the body of the womb that, supposing a considerable amount of cervical ulceration be found two or three months after parturition, this should not be taken as the sole lesion, for involution may be defective in the body of the womb, albeit complete in the cervix. There is no better way of promoting involution in most cases, than by properly treating the cervical inflammation, and I have already related a case in which the gradual involution of both body and cervix was brought about by the internal application of a strong solution of nitrate of silver, the os uteri being patent, but without ulceration. This patency of the os uteri, and the possibility of introducing half the first phalange into it any time after parturition, makes me suspect defective involution, whether the womb be ulcerated or not, and I always apply a strong solution of some caustic to the whole length of the cervical canal. In similar cases it has been advised to leave a little bit of the solid lunar caustic to melt in the cervical canal. When the womb is found much too large several months after confinement, and without cervical lesions, I order a ten-grain mercurial suppository to be put up the vagina on going to bed for the first fortnight, and afterward on alternate nights, for two or three weeks, telling the patient to inject plain water in the morning, and a solution of alum and zinc at night. The exhibition of the mercury should be stopped if the gums show signs of impending salivation.

A more effectual way of giving ergot would be to make subcutaneous injections of ergotine, and Dr. Collins, an American practitioner, writes favorably of having injected a solution of ergotine into the tissue of the cervix in cases of subinvolution of the uterus and chronic engorgement of the neck of the organ. He uses a needle about four and a half inches long, attached to a hypodermic syringe; operates through a common glass speculum after producing local anæsthesia by placing a pledget of cotton, saturated with chloroform, against the os; and throws into the cervical tissue a solution containing two or two and a half grains of Squibb's ergotine. The injections were repeated every six days and very little local irritation is said to follow, while the pain, if any existed, soon assumed an intermittent character.

It is fair to promise a woman, that defective uterine involution that has become permanent may be cured by a subsequent pregnancy. I have seen cases, and others are on record, in which uterine fibroids of considerable size have been softened and swept away by the flood tide of pelvic circulation that characterizes pregnancy and puerperality; so it is easy to understand that tissues, by defective involution long made permanently too hard, will soften, allow of a perfect pregnancy, and of the subsequent building up of a new womb after a better model. When the womb is found large enough to admit a bougie to the depth of about four inches, and when this enlargement can be traced to a delivery that occurred a year or more previously, it is fair to attribute this enlargement to defective involution, but its treatment merges into that of one or more complications that will have certainly arisen in that time—displacements, internal metritis, hypertrophy, or chronic inflammation of both body and neck of the womb. I shall say nothing of the treatment of such complicated cases, except that, when defective involution is associated with an enlarged and hard cervix lined with a diseased mucous membrane, nothing is better calculated to reduce the size of both the body and the neck of the womb than an issue made in the most accessible part of the cervix by means of potassa fusa cum calce, the wound being freely swabbed with tincture of iodine on alternate days for the following month. There should be no surgical treatment during the ensuing three months, after which a second application of potassa fusa cum calce is often advisable.

In ordinary circumstances I would not think of interfering with the natural course of delivery, but if, in a woman of weakly constitution, involution had been repeatedly defective, it might be advisable to follow Dr. Dupieris' plan and to inject a solution of tincture of iodine into the womb immediately after the detachment of the placenta.

Notwithstanding Dr. Serdukoff's assertion, the rate of uterine involution after pregnancy at full term can only be roughly guessed at, for the hand has to measure the womb through abdominal walls of variable

degrees of thickness and laxity; but we know positively nothing respecting the rate of uterine involution after abortion, and it would be well if the structure of the uterine walls were examined with the microscope when women die after abortion in our hospitals. From the great frequency of uterine diseases after abortion, and from the fact of its being contrary to order that the womb should be called upon to undergo fatty degeneration, unless, after pregnancy at full term, it is presumable that the two facts are related as cause and effect. Defective involution is probably the reason why one abortion is so often followed by others, the uterine walls refusing to properly expand for the safe guardianship of the fœtus, whereas, if the body of the womb be healthy, pregnancy will often proceed satisfactorily in spite of serious cervical inflammatory lesions. It is, of course, still possible for pregnancy to be brought to a satisfactory issue under the most unfavorable circumstances, as in a case under observation. The cervix was extensively torn in a first labor, eighteen years ago, and abortion was repeated seven times consecutively. An enlarged body, as well as a considerable amount of cervical enlargement and inflammation, was recognized some years ago by Dr. George Bird, but his judicious treatment was not carried out. From the symptoms complained of previous to the eighth conception, it is clear that the uterine disease had not abated, and yet this lady went her full time and was safely delivered of a fine boy. During the following four years she did not conceive, and long periods of aggravated dysmenorrhœa and menorrhagia were separated by ten days of miserable health. I found the body of the womb about three times its usual size, the cervix similarly enlarged, very hard and sensitive, the os uteri irregularly shaped, and its mucous membrane of a dusky red. To cure this patient, it would be necessary to divide the cervix for the deep drainage of long-congested tissues, and then to apply potassa fusa c. calce; but I have only been allowed to palliate the worst symptoms.

To prevent the defective involution that follows abortion, this should be treated like an acute disease of the womb. The patient should rest in bed so long as pelvic pains are severe, and warm linseed-meal poultices should be applied to the abdomen. Linseed-tea or poppy-head injections are very useful during the first week, and then, twice a day, injections made by adding a drachm of laudanum and of acetate of lead to a pint of tepid water. When the patient resumes her usual mode of life, if there be back pains or bearing-down pains on slight exertion, a vaginal discharge staining the linen yellow, and debility in spite of tonic treatment, then the patient should be examined, and surgical applications should be made to the cervix if it be ulcerated. Involution is so often defective after abortion, because women get about too soon, and too soon resume matrimonial intercourse; and the want of some definite understanding respecting the rules to be adopted after abortion renders it a fertile

source of disease. Much of this would be prevented, if we could persuade the public that a month's treatment is not too much for an ordinary miscarriage at the third or fourth month, and that a bad miscarriage is worse than a confinement. When considerable, and of long standing, defective involution of the vagina is little improved by astringent injections and suppositories; perhaps Dr. Copeman's plan of plugging the vagina with marine oakum may be more effectual.

INVESTIGANDA.

An author cannot pass in careful review the facts and theories of an art or science, without becoming aware of deficiencies that require to be made good and of matters of fact that need substantiating. I therefore draw attention to the following subjects as deserving further investigation.

1. Internal Metritis.—Intra-uterine injections should be again tried, with only one or two drachms of medicated fluid, after free dilatation of the cervix.

2. Uterine Hypertrophy.—The effects of mercury, given internally and in suppositories, should be carefully tried. Ergot should likewise be tried, given internally, in suppositories, and by subcutaneous injection. The internal exhibition of iodoform is worth trial, as well as the dressing, with the tincture of iodoform, of the sore made on the cervix by the application of potassa fusa c. calce.

3. Uterine Surgery.—The value of very hot-water injections should be well tried in pelvic operations.

4. Uterine Ulceration.—The value of iodoform, as a local application, by means of its ethereal tincture and by iodoformed wool, has to be ascertained. Boracic acid and boracic lint might be likewise tried.

5. Menorrhagia.—The subcutaneous injection of ergotine should be tried, likewise vaginal injections with hot water at 115° F., and also intra-uterine injections of the same in post partum flooding and in that of abortion.

6. Cervical Stricture.—The value of the instantaneous dilatation of the cervix, recommended by Dr. Goodell, requires testing to ascertain whether it be the best way to dilate the cervix, and a cure for uterine flexions.

7. Displacements.—Dr. Cutter's system of uterine orthopedy noted at page 236, deserves trial.

8. Chronic Ovario-Uterine Disease.—The utility of silk setons, applied above the pubes as recommended by Huguier, deserves trial.

9. Defective Involution.—If I am right in calling it "the workshop of uterine pathology," defective involution, both after parturition and abortion, has to be better studied than it has been, at the bedside and in the dead-room. The best treatment of defective involution has still to be found.

FORMULARY.

THE author has been in the habit of using most of the preparations contained in this formulary.

LOTIONS.

Raspail's Sedative Lotion.

1.	Liquid ammonia	℥ ij.
	Camphorated spirit of wine	ʒ iiss.
	Common salt	℥ ij.
	Water	℥ xxxii.

The salt is dissolved in the water, the solution filtered, and mixed with the other ingredients; the lotion should be kept in a well-closed bottle. It may be used by means of a small sponge, or a pad of soft linen may be soaked in it and applied to the painful part, renewing it as often as may be required. If the lotion irritate the skin too much, water may be added. This is a valuable application in cerebral affections.

Spirit of Ammonia Lotion.

2.	Liquid ammonia	ʒ iv.
	Laudanum	ʒ ij.
	Water	O ij.

Applied freely as a lotion, this is useful to allay the irritation of nettle-rash and other cutaneous affections; and for the daily use of invalids who have lost the habit of daily ablution.

LINIMENTS.

Oil is much better than glycerine as the constituent of liniments, but for them we want an oil unchangeable as vaseline.

Sedative.

3.	Sulphate of atropia	gr. iv.
	Sulphate of morphia	gr. viii.
	Otto of roses	gtt. ij.
	Spirit of wine	℥ ss.
	Olive oil ..... to	℥ iv.
4.	Sulphate of atropia	gr. viii.
	Sulphate of morphia	gr. xvi.
	Aconitia	gr. ij.
	Dilute sulphuric acid	♏ v.
	Spirit of wine	℥ ss.
	Olive oil ..... to	℥ iv.

This liniment is expensive, for sulphate of atropia is now sold at tenpence a grain; the sulphate of atropia is best, because it is more soluble than atropia. It should be shaken before it is used.

Sedative and Stimulant.

5.	Chloroform	℥ ss.
	Spirit of turpentine, or fir-wood	℥ j.
	Camphor	℥ ij.
	Oil of lavender	♏ xx.
	Olive oil ..... to	℥ iv.

The four first ingredients should be mixed before adding the oil, and the liniment should be well shaken before it is used.

Drops for External Use.

6.	Sulphate of atropia	gr. iij.
	Acetate of morphia	gr. vi.
	Strong spirit of wine	℥ i.

Thirty drops to be sprinkled every morning over a bit of piline, or of therapeutic lint, which is to be applied to the hypogastric region and worn all day. This is the best outward application for the moderate amount of pelvic pain that so frequently attends on sexual diseases.

Oleate of Mercury.

7.	Pure morphia (oleic acid q.s.)	gr. vi.
	Oleate of mercury (five per cent.)	℥ j.

To be gently rubbed over the painful part of the abdomen every day, or less frequently should it bring out a rash. It is best applied by a

thick, stumpy pencil, and a bit of flannel should be worn over the greasy surface.

Ointments.

The chemist never gets pure lard; he may remove some of its impurities by filtering it, but the stearine and palmitine of the lard are ever tending to oxidize, that is to produce caproic acid. The action of benzoic acid only partially limits this tendency to oxidization, which is increased by the heat of the body, by the normal and the morbid secretions of the skin, and even by some chemicals, like oxide of zinc. What is true of lard applies in a less degree to most fatty compounds, so they should only be used as excipients for ointments when the skin is perfectly sound, and never to the diseased skin, nor to the pudendal and anal borderlands of the skin. In vaseline we have a perfectly neutral substance and an admirable excipient, for it easily mixes with chemicals, does not decompose them, and is not itself susceptible of decomposition. For these reasons vaseline should always be prescribed when the ointment is to be applied to the pudenda, and there are already cases on record of eczema pudendi healing rapidly as soon as vaseline was made the excipient of an ointment, of which the same active agents had been useful or detrimental when incorporated with lard. Glycerine of starch, the "Glycerinum Amyli" of the British Pharmacopœia, is a less stable compound, and is more irritating than vaseline, but it is, nevertheless, a valuable agent, being a good medium to hold in suspension all the agents usually incorporated with lard. This preparation does not become rancid like fatty substances, does not soil the body linen, and it has over vaseline the advantage of being instantaneously removable by means of a damp towel. It has been objected to glycerine of starch that it is too absorbent of moisture to be useful; but it only becomes liquid if kept too long, and thus suggests to the pharmaceutist the advisability of not making a large quantity at a time, and of keeping it closely covered up. The editors of the "Pharmacopœia" should have profited by the experiments made for me some twelve years ago by Mr. Bullock, of Hanover street, who found that Polson's corn-flour made a much better ointment than ordinary starch. Perhaps this is why I have often found glycerine of starch made at other establishments to look like granulated blanc-mange, instead of being a stiff, semi-transparent jelly.

Glycerine Ointment.

8. Take of Polson's corn-flour ..... gr. lxxx.
Price's glycerine ..... ℥ j.

Mix the starch with the glycerine in a gradually heated oil-bath, by constant stirring, until the production of a semi-transparent, gelatinous mass.

Veratria Ointment.

9.	Veratria	gr. ij.
	Otto of roses	gtt. j.
	Glycerine	ʒ ss.
	Glycerine of starch	℥ j.

A piece about the size of a filbert, rubbed into the skin above the pubes every day, is useful in dysmenorrhœa and dysuria.

Atropia Ointment.

10.	Sulphate of atropia	gr. ij.
	Glycerine	ʒ ss.
	Oil of neroli	gtt. iv.
	Glycerine of starch	℥ j.

This, or the following ointments, may also be used, as above, for the pelvic and spinal pains of ovario-uterine diseases.

Bismuth Ointment.

11.	Trisnitrate of bismuth	ʒ ij.
	Vaseline	℥ j.

Belladonna Ointment.

12.	Belladonna liniment	ʒ ij.
	Glycerine of starch	℥ j.

Morphia Ointment.

13.	Acetate of morphia	gr. x.
	Glycerine	ʒ ss.
	Otto of roses	gtt. j.
	Vaseline	℥ j.

Iodide of Potassium Ointment.

14.	Iodide of potassium	gr. lx.
	Calcined magnesia	gr. v.
	Otto of roses	gtt. j.
	Water	ʒ j.
	Vaseline	℥ j.

To be rubbed into the skin of the lower part of the abdomen twice a day. The calcined magnesia is added to prevent the staining of the linen, which is caused by the acid secretions of the skin liberating a small portion of iodine.

Mercurial Ointment.

15.	Sulphate of atropia	gr. ij.
	Sulphate of morphia	gr. iv.
	Olive oil	ʒ j.
	Oil of lavender	gtt. x.
	Strong mercurial ointment	℥ j.

Mercurial ointment made with glycerine plasma does not become rancid, and is, therefore, far preferable to that which is made of grease; but, at all events, the above is not made additionally repulsive by the smell of laudanum and of the extract of belladonna. A piece about the size of a small walnut is to be rubbed in, morning and evening, and absorption will be promoted by leaving the residue on the skin, and by placing over it a warm linseed-meal poultice.

Extemporaneous Plasters.

It occurred to me that, by boiling a larger quantity of starch in the same quantity of glycerine, the preparation might become stiff enough for plasters, and the result was a very firm and tenacious compound, well calculated to make *readily made plasters*, not open to the objections raised against those in common use, which either do not stick at all, or stick so firmly that their removal is difficult. Some of them also smell so disagreeably as to interfere with a patient's sleep, while others cause too much skin-irritation. While wearing the readily made glycerine plasters, the patient may continue using the sponge-bath, or any other bath that may be advisable, as there is no difficulty in removing and replacing the application. This hard glycerine ointment is capable of holding, partly in solution, partly in suspension, all the ingredients of the plasters now in use. It can be made softer by being rubbed up with a little glycerine, and I tell the patient to spread it thickly with a paper-knife on gutta-percha cloth. Before reapplying the plaster, it is well to clean the gutta-percha with a sponge and tepid water, and then to spread more ointment over it. It has been pointed out that glycerine applied to a uterine sore will draw from it a notable quantity of serum. I have known glycerine plasters to do the same, to a less degree, when applied to an irritable skin. In one case, where I had the plaster applied to the pit of the stomach for distressing sensations occurring at the change of life, a large portion of the front of the chemise was stiffened by a colorless discharge, which came from the unbroken surface of the skin, and the discharge ceased on leaving off the plaster. Dressing a blistered surface with glycerine of starch might be a powerful mode of medication, for it offers an easy and convenient way of depleting the lymphatic system.

Glycerine Plaster.

16. Take of Polson's corn-flour..... gr. c.—cxx.
Price's glycerine ..... ℥ j.

Boil the starch and the glycerine in an oil-bath, and stir until the production of a stiff, semi-transparent mass.

Atropia Plaster.

17. Glycerine plaster..... ℥ j.
Sulphate of atropia ..... gr. iv.

Veratria may be used in similar proportions, but I have ordered double that quantity of acetate of morphia. The alkaloid salt is to be rubbed down with a few drops of glycerine, till perfectly smooth; it is then to be carefully incorporated with the plaster, and spread thickly on gutta-percha cloth when wanted by the patient.

Compound Sedative Plaster.

18. Sulphate of atropia ..... gr. iij.
Veratria..... gr. iij.
Sulphate of morphia..... gr. viii.
Glycerine plaster..... ℥ j.

To be made as above.

VAGINAL INJECTIONS.

Emollient injections should be used tepid, and they should be given cold when an astringent action is wanted. Some cases of acute inflammation are improved by injections as hot as the patient can bear them. I frequently advise a teaspoonful of laudanum to be added to each pint of fluid, instead of the following injection.

Poppy-head Injection.

19. Bruised poppy-heads ..... ℥ iv.
Water..... O iv.

To be boiled for fifteen minutes and carefully strained to make three pints. This decoction is useful by reason of the mucilage it contains, as well as a small quantity of opium.

Linseed Injection.

20. Slightly-bruised linseed..... ℥ ss.
Water..... O iij.

Gently boil it for ten minutes, and carefully strain it, for the fragments of the seeds are apt to obstruct the pipe of the syringe, and render it necessary to send it to the instrument-maker.

Sedative Injections.

It is easy to increase the sedative action of these injections by increasing the quantity of laudanum to two or three drachms to the pint, and by combining the laudanum with the tincture of henbane.

Cooling Injections.

To a pint of water at 70° F., should be added two drachms of biborate of soda or chlorate of potash, or one of acetate of lead or of the liquid subacetate of lead. To these solutions I often add a teaspoonful of laudanum. Glycerine dissolves the subacetate of lead and also the neutral nitrate of bismuth, and one or two tablespoonfuls of each of these glycerols, in a pint of water, make an elegant and efficient injection.

Astringent Injections.

Their temperature should not be higher than 60° F., and lower if the patient can bear it.

Oak Bark.

21. Oak bark ..... ℥ j.
Water ..... O ij.
To be boiled down to one pint, and strained.

An infusion of green tea also makes a good injection; and another may be instantaneously prepared by dissolving from 30 to 60 grains of tannin in a pint of cold water.

One drachm of the mineral astringents, such as alum, iron-alum, or perchloride of iron, in a pint of cold water, forms an excellent astringent injection; and another can be made by adding to the same quantity of water one drachm of alum and ten grains of sulphate of zinc.

Antiseptic Injections.

22. Solution of chlorinated soda ..... ℥ j.
Water at 60° F. ..... O j.

23. Permanganate of potash ..... 3 j.
Water at 60° F. ..... O j.

To these injections, a drachm of laudanum and a tablespoonful of glycerine should be added, to render the injection less irritating to the womb, and the discharge less offensive to the skin.

24. Liq. carbonis detergens..... ℥ ij.
Water at 60° F..... O j.

This is a valuable antiseptic. A very weak solution of carbolic acid, in water, is also useful as an injection.

Creosote Injection.

25. Creosote..... ♏ 20.
Yolk of egg..... j.
Water .....to ℥ 8.
Half of this to be added to a pint of water.

ANTISYPHILITIC.

26. Iodide of potassium..... gr. cxx.
Laudanum ..... ʒ j.
Water.....to O j.

To be used in tertiary symptoms of syphilis. The iodide should be dissolved in the water, and the laudanum afterward added.

EMMENAGOGUE.

27. Liquid ammonia (sp. gr. 0.959)..... ʒ j.
Tepid milk..... ℥ vi.

When the injection is made, the pelvis should be well raised, and the labia pressed, so as to retain some of the injection for five minutes.

IODINE VAGINAL INJECTIONS.

28. Tincture of iodine,
Laudanum, of each..... ℥ ij.

Two or three teaspoonfuls to be added to a pint of water. To be used once or twice a day.

Intra-uterine Injections.

29. Tincture of iodine ..... ℥ j.
Distilled water ..... ℥ j.

30. Sol. of subsulphate of iron..... ʒ v.
Distilled water ..... ℥ iv.

31. Perchloride of iron..... ʒ ij.
Bicarbonate of soda..... gr. x.
Distilled water ..... ℥ iv.

I prefer a solution of the solid perchloride of iron to the solution of perchloride of iron of the British Pharmacopœia. I have said that, for surgical purposes, it would be better to use the liq. ferri subsulphatis of the United States Pharmacopœia than our liq. ferri perchloridi, and I subjoin the chemical composition of both compounds, as made out for me by Mr. Bullock.

Liquor Ferri Perchlorid. Fort., B.P.

F. ʒ j.=31.74 grains Fe_2Cl_6.

Liquor Ferri Subsulphatis, U.S.

F. ʒ j.=38.85 grains ($2Fe_2O_3 5SO_3$).

Hypodermic Injections.

Atropia.

32.	Sulphate of atropia.....	gr. $\frac{1}{100}$
	Distilled water	gtt. xxx.

This is the initial dose for a woman.

Morphia.

33.	Acetate of morphia	gr. $\frac{1}{8}$
	Distilled water	gtt. xxx.

Although, in all probability, larger doses may be well borne, the initial dose should not exceed one-sixth of a grain.

Enemata.

Emmenagogue.

34.	Barbadoes aloes	gr. x.
	Tepid Milk	℥ ij.

To be injected into the bowels twice a day when the menstrual flow is due, until it comes, or until tenesmus becomes unbearable.

Sedative.

35.	Battley's solution of opium	ʒ j.
	Tincture of henbane.....	℥ j.
	Water.....	℥ iij.

One tablespoonful of this, or double the quantity, to be added to a little warm milk, and to be given by means of a two-ounce india-rubber bottle.

Vaginal Suppositories.

More or less rancid fatty substances partially decompose the active constituents of suppositories. Their sojourn in the vagina must be prejudicial when there is vaginitis or valvitis, particularly if it be of a gouty or an eczematous nature. Now, four parts of vaseline and one part of pure paraffine make an elegant compound, that melts at the temperature of the body, and does not oxidize or promote the decomposition of the chemicals that it may be mixed with. Somewhat more of the paraffine will be required in summer to give a suppository a proper consistency, and I believe this compound will eventually displace the substances in common use.

Opium Suppositories.

36.	Opium	gr. xxiv.
	Vaseline	gr. cxxv.
	Paraffine	gr. xxxi.

Melt paraffine in 100 grains vaseline with a gentle heat, then add the opium and ℥ 25 vaseline, previously rubbed together in a mortar, and mix thoroughly. Pour the mixture, while fluid, into suitable moulds of capacity of gr. 15, so as to make 12 suppositories.

Emmenagogue Suppositories.

Aloine Suppository.

37.	Aloine	gr. ij.
	Cacao butter	gr. x.

Ergot Suppository.

38.	Liq. ext. of ergot (inspissated)	ʒ j.
	Prepared lard	gr. iv.
	Cacao butter	up to gr. xv.

Mercurial Suppository.

39.	Strong mercurial ointment	gr. v.
	Vaseline	gr. viii.
	Paraffine	gr. ij.

Rectal Suppositories.

40.	Extract of opium	gr. j. or ij.

Rub up the opium with six grains of the paraffo-vaseline previously described, and make the suppository round.

41. Extract of opium ..... gr. j.
Extract of belladonna..... gr. ss.

To be made like the preceding.

Capsules.

Chloroform Capsules.

They afford a convenient way of placing chloroform in contact with the neck of the womb, and they are made by Messrs. Duncan & Flockhart.

Bromide of Camphor Capsules.

Each of Dr. Cline's capsules contain five grains of the bromide.

Turpentine Capsules.

Each contains eight drops of oil.

Mixtures.

Sedative Mixtures

42. Tincture of castor..... ʒ iij.
Compound tincture of lavender..... ʒ vi.
Camphor mixture .....to ℥ vi.

A tablespoonful two or three times a day when cerebral symptoms are marked.

Morphia Mixture.

43. Hydrochlorate of morphia ..... gr. j.
Diluted hydrocyanic acid ..... ♏ xxiv.
Spirit of wine..... ʒ ij.
Distilled water.....to ℥ vi.

One to two tablespoonfuls alone, or in a small quantity of some effervescing draught, when there is sickness.

Emmenagogue Mixtures.

44. Oil of savine ..... ʒ j.
Spirit of nitrous ether..... ʒ iij.
Mucilage ..... ℥ j.
Water.....to ℥ vi.

A teaspoonful to be given every two hours, after shaking the bottle, when the patient is half comatose from suppressed menstruation.

45. Tincture of ergot ..... ℥ ij.
Syrup of saffron ..... ʒ ss.
Compound decoction of aloes ..... ʒ iss.

A teaspoonful being given three times a day.

Hæmostatic.

46. Gallic acid ..... gr. xxxvi.
Battley's solution of opium ..... ♏ xxx.
Tincture of matico ..... ℥ iij.
Infusion of orange-peel ..... to ʒ vi.

A tablespoonful every two hours.

47. Tincture of digitalis ..... ℥ iij.
Liquid extract of ergot ..... ℥ iij.
Distilled water ..... to ʒ vi.

The sixth part to be taken three times a day for three days, to check menorrhagia.

Turpentine Mixture.

48. Turpentine, or fir-wood oil ..... ʒ j.
Tincture of capsicum ..... ʒ ss.
Comp. tinct. of lavender ..... to ℥ iv.

From one to two drachms of this mixture is to be given in milk, after shaking the bottle; but in *post-partum* flooding, half an ounce to an ounce may be given in plenty of milk with the best results. Half an ounce of turpentine, beaten up with an egg, stops dangerous post-partum flooding by firmly contracting the uterus. The same preparation can be given by the rectum. Turpentine can be taken in capsules, each contains eight drops of essential oil, and its value as an hæmostatic deserves to be better known.

Antisyphilitic.

49. Iodide of potassium ..... gr. xx.
Compound decoction of sarsaparilla ..... ℥ iv.

To be taken in the course of the day, for tertiary symptoms of syphilis.

Syrups.

The following are very convenient preparations, from a half to a whole teaspoonful being given in a little water twice a day, after meals.

Syrup of hypophosphite of quinia and soda.
" " quinia and iron.
" " quinia, iron and strychnia.
" citrate of iron.
" citrate of iron and quinia.
" iodide of iron and potassium.
" albuminate of iron and potash.
" superphosphate of iron, quinia, and strychnia.

This last preparation contains two grains of the iron, one of quinia salt, and the thirty-second part of a grain of strychnia to each fluid drachm. Parish's chemical food is a similarly valuable preparation.

Granular Medicines.

The granular effervescent preparations of citrate of quinia, citrate of iron and quinia, etc., which have been introduced by Mr. Savory, are useful remedies, particularly in summer. Messrs. Twinberrow have recently prepared the ferri citras c. strychnia, ferri citras c. quinia et strychnia, in a granular effervescent form. Messrs. Young & Postans, of Baker street, have introduced a granular effervescing hypophosphite of lime and of soda. One teaspoonful contains five grains of the respective salts, and affords a convenient and safe way of introducing phosphorus into the system. Hommolle's granules of digitalis have been mentioned, and two or three may be taken two or three times a day.

Pills.

Sedative Pills.

50. Extract of henbane ..... gr. iij.

One or two of these pills, or the following, to be taken at night or oftener; but I give Indian hemp in one-grain doses so soon as I find it agrees, and often in larger doses.

51. Extract of henbane ..... gr. ij.
Dover's powder ..... gr. j.

52. Extract of henbane ..... gr. ij.
Extract of Indian hemp..... gr. ss.

Anaphrodisiac Pills.

53. Camphor ..... gr. ij.
Extract of henbane ..... gr. j.

One, two, or three of these pills, three times a day.

Tonic and Sedative Pill.

54. Extract of henbane,
Sulphate of quinia, of each ..... gr. j.

To be taken every night. This is well borne by women who cannot bear large doses of any tonic; some have continued to take it for months, even during the menstrual period; and it will not interfere with the action of any purgative that may be required.

Tonic Pill.

55. Sulphate of quinia,
Sulphate of iron, of each..... gr. ss.
Cayenne pepper ..... gr. j.

This is very suitable in many cases, the number of pills varying according to the case. I have given two, three times a day, for many weeks.

Tonic and Laxative Pills.

56. Sulphate of quinia ..... gr. ss.
Compound rhubarb pill..... gr. ij.
Extract of henbane..... gr. j.

Two of these pills to be taken at night, or one may be given as a dinner-pill. Although this pill has only a slight purgative action, it often brings away stools that scald the passage, as if mercury had been taken.

Hæmostatic Pills.

Gallic Acid Pills.

57. Gallic acid..... gr. ij.
Extract of matico ..... gr. j.
Watery extract of opium..... gr. ss.
To be taken every three or four hours.

Ergotine Pill.

58. Bonjean's ergotine..... gr. iij.

One pill, three times a day, in association with three of Hommolle's granules of digitalis during menorrhagia.

Anti-Menorrhagic Pills.

59. Bonjean's ergotine..... gr. ij.
Sulphate of quinine..... gr. j.

One at night, during an intra-menstrual period, to prevent menorrhagia.

Antisyphilitic Pills.

60. Subiodide of mercury ..... gr. j.
Extract of henbane ..... gr. ij.

One pill to be taken morning and night.

Miscellaneous.

Caustic Tincture of Iodine.

61. Iodine ..... gr. lx.
Iodide of potassium ..... gr. xxx.
Rectified spirit of wine .....to ℥ j.

The painful parts of the back and abdomen may be painted with one coat of this tincture once a week or oftener.

Cooling Powder.

62. Powdered starch ..... ℥ v.
Powdered camphor ..... ℥ j.
Powdered acetate of lead ..... ℥ ss.
Essential oil of bitter almonds ..... xx.

It is useful to dust the pudendum with this powder two or three times a day, when there is great irritation.

Medicated Wools.

Iodoformed wool (Messrs. Bullock & Co.).
Alkaline wool (contains bicarbonate of soda).
Chloralum wool.
Iodine wool.
Nitrate of silver wool.
Boracic acid lint.

Ethereal Tinctures.

Ethereal tincture of iodine.
Ethereal tincture of iodoform.

Collodion.

Flexile collodion.
Iodized collodion.
Perchloride collodion.

How to Remove Stains.

Stains of Nitrate of Silver.

The best way to remove stains of nitrate of silver from linen, is to moisten the stain with a few drops of a solution of one drachm of cyanide of potassium in two ounces of water, after which the linen should be well rinsed in clean water.

Liquid to Remove Iodine Stains.

63. Hyposulphite of soda ..... gr. cxx.
Distilled water ..... ℥ iv.

The linen is to be soaked in this solution and then washed in water.

Lead Stains.

Occasionally a patient will complain that the use of a weak solution of acetate of lead as a vaginal injection, causes the body linen and towels to be stained reddish brown. This is owing to the decomposition of a small quantity of the acetate of lead, by the sulphuretted secretions from the skin, or from the bowels of the patient. The stain is thus due to a very small quantity of sulphuret of lead, which could only be removed by the use of such strong acids as would very much impair the tissue of the cloth.

INDEX.

Absence of clitoris, 281
ovaries, 287
womb, 282
Acetate of lead, external use of, 56, 312
internal use of, 191
Acid nitrate of mercury, 145
Acids, mineral, as caustics, 146
tonics, 69
Aconite, 102, 128
Actual cautery, 162
for neuralgic complaints, 129
for vomiting, 129
Aix-les-Bains, 77
Alkalies, 128
Aloes, 175, 269, 314
Ambergris, 101
Amputation of cervix, 166, 207
Anæsthesia in uterine practice, 32
Anteflexion, 216, 233, 284
Anteversion, 235, 283
Antimony, 126, 173
Antisyphilitic injection, 239, 313
mixture, 317
pills, 320
Antiphlogistic medication, 109
Antiseptic injections, 312
lotion, 312
marine lint, 230
Apiole, 101
Aquapuncture, 108
Arsenic, 69, 177, 205
Astringents, 191
Atropia, 102, 307

Bandages, 225
Baths, theory of, 60
Belladonna, 102, 309
Bismuth, neutral nitrate of, 312
subnitrate of, 240, 309
Bivalve speculum, 21
Bladder, inflammation of, 254
irritable, 219, 252
Blisters, 192
Bloodletting, 119
derivative, 171
hæmostatic, 187
Breasts, 249
Bromide of ammonium, 106
camphor, 106
potassium, 106
zinc, 107
Bromine, 136
Bougies, sea-tangle, 39
wax, 29

Calomel, 264
Caloric, an emmenagogue, 172
hæmostatic, 188
Camphor, 105
Cancer, 185, 204
Cantharides, 177
Capsules, 316
Carbolic acid, 135, 264
Castor, 101
Catalepsy, 86
Catamenial fever, 182
Cautery, actual, 162
electric, 164
potential, 148
Causes of diseases of women, 10, 289
Caustics, theory of, 132
action, 144
Cervical dilatation, 34

Cervical dilatation, extensive, 38
for vomiting, 262
moderate, 35
rapid, 40
Cervix, elongation of, 242, 283
Chancre, 202
Change, 75
Chromic acid, 135
Chloral, 98
Chlorate of potash, 256
Chloroform, 98
Chloride of calcium, 245
zinc, 162
Chlorosis, 170
Climacteric flooding, 183
Clitoridectomy, 91
Cold, hæmostatic action of, 187
sedative action of, 107
Collapse in chronic disease, 66
Collodion, flexile, 239
Conium, 105
Convulsions, puerperal, 114
Consumption, 272
Corrosive sublimate, 239
Cotton-wool, medicated, 24
Counter-irritants, 128, 192
Curette, uterine, 207, 233
Creosote, 264, 313
Cyst, vaginal, 242
Cystitis, 230

DANGER from ascending douches, 77
enemata, 58
examinations, 12
glass syringes, 55
Hodge's pessary, 235
hysterotomy, 41
operations, 32
nitrate of silver, 142
potassa fusa, 158
c. calce, 152
stem-pessaries, 211
the actual cautery, 231
the uterine sound, 25
vaginal injections, 57
Zwancke's pessary, 229
Debility, varieties of, 64
Defective involution, 296
Descent of womb, 226
Diarrhœa, menstrual, 268
Diet, 50
Digital examination of the womb, 16
inner womb, 29
Digitalis, 101, 122, 317
Dilatation of cervix, 34, 262
vagina, 241
Dilator, Dr. Wilson's, 40
Dilators, bulb-headed, 43
Diseases of women, 3
Displacements, causes of, 213
symptoms of, 218, 283
treatment of, 222
uterine, 210
Double touch, 19
Douche, ascending, 77
Dover's powders, 99
Duckbill speculum, 21
Dysmenorrhœa, 218, 220
inflammatory, 112, 285
obstructive, 152, 171
ovarian, 287
spasmodic, 95
Dyspepsia, 257

ECZEMA genitale, 239
Education of women, 289
Electric cautery, 164
Electricity a tonic, 78
an hæmostatic, 193
Ems, 77
Emetics, 260
Emmenagogue medication, 167
triduum, 169
Enemata, 58, 314
medicated, 59
Enteritis, 267
Epilepsy, 87
Ergot, 176, 189, 245, 319
Examination, dangers of, 12
digital, 16
double touch, 19
ethics of, 11
genu-pectoral, 19
of patients, 11
perpendicular, 19
speculum, 19
rectal, 18
of the inner womb, 30
of women, 10
Exercise, 48, 173,
External applications, 52, 173
Extirpation of the womb, 208

Faith in drugs, its eclipse, 14
Ferguson's speculum, 20
Fibroid uterus, 243
Fibroids, 185, 244, 294
uterine, 244,294
Flooding, cervical, 184
climacteric, 183
from an impregnated womb, 185
from cancer, 185
fibroids, 185
foreign bodies, 184
polypi, 185
intra-uterine, 185
post-partum, 186, 194
vaginal, 184
Fomentations, 53
internal, 55
Forceps, speculum, 23
Friedrichshall water, 126

Gangliopathy, 93
Genu-pectoral examination, 19
position, 283
Getting-up after delivery, 295
Glass syringes, dangers of, 55
Globe pessaries, 227
Glycerole of bismuth, 312
lead, 312
Glycerine, 24, 308
Gout, 199
Granular medicines, 318
Gynecology in England, 5
study of, 6

Headaches, 92, 266
Hemorrhoids, 269
Hæmostatic medication, 178
Henbane, 104, 318
Herpetism, uterine, 196
Hip-baths, 61, 71
dangers of, 71
Hodge pessary, 235
Hot bags, 54
water fomentations, 55
Hull's hypogastric bandage, 225
Hydrochlorate of ammonia, 259
Hydrocyanic acid, 101
Hydrotherapeutics, 72
Hymen, 281
Hypertrophy, uterine, 150
Hypodermic injections, 99, 189
Hypophosphite of soda, 68, 318
Hysteria, diagnosis of, 84
etiology of, 83
treatment of, 85
theory of, 81
Hysterical back, 86, 94
bladder, 253
vomiting, 262
Hysterotomy, 41, 233

Ice, 107, 187, 206, 263
Indian hemp, 104, 318
Inflammation theory, 3
Injections into the bladder, 255
intra-uterine, 43, 313
vaginal, 54, 311
Insanity, 87
Insomnia, 52
Internal examination, 11
Interrogation of patients, 11
Intra-uterine flooding, 179, 182, 183
injections, 43
surgery, 43
swabbing, 45
Iron, 68, 314
Irrigations, 58
Irritable bladder, 252
intestines, 267
rectum, 268
tumor of urethra, 250
Iodide of potassium, 106, 313
Iodine, 128, 313, 320
caustic, tincture of, 136
tincture of, 135
Iodoform, 135
Issues for uterine affections, 129
vomiting, 266

Kreuznach, 77

Laceration of womb, 298
Laminaria bougies, 39
tents, 36
Leeches for vomiting, 262, 265
Leeching the epigastric region, 265
pregnant womb, 123
pudenda, 121
vagina, 120

Leeching the womb, 116, 262
Lever speculum, 21
Liebman, Dr., his experiments, 27
Liniments, 53, 306
Lint, boracic, 134
marine, 230
therapeutic, 52
Liver derangements, 258
Lotions, 306
Louesch, 77
Lupulin, 107
Lunar caustic, 136
Latero-flexion, 217
Lymphangitis, pelvic, 33

Mammary diseases, 249
Mania, puerperal, 115
Marriage, a sedative, 291
a tonic, 80, 291
an emmenagogue, 175
Masturbation, 90
Menorrhagia, treatment of, 179
Menses, retention of, 153, 218
Menstrual fluid, its retention, 153, 218
Menstruation, operations during, 31
right management of, 290
treatment during, 14
Mercury, 126, 197, 201, 203, 205, 239, 307, 320
Mesmerism, 107
Metallic probes, 23
Metritis complicating other diseases, 246
Metrorrhagia, its prevention, 186
Milk diet, 252
Mineral acids, 69, 191
waters, 77
Misplacements, uterine, 210
Mixtures, 316
Morphia, 98
Mucous membranes, ulceration of, 133

Nausea, 260
Nitric acid, 146
Nitrate of silver, 136
pliable, 137
Nitrite of amyl, 264
Nursing of women, 46, 178, 294
after abortion, 303
lying-in women, 295

Oak-bark injections, 314
Obliteration of vagina, 281
Obstructive dysmenorrhœa, 154, 171
Ocular examination, 20
Ointments, 53, 308
Oleate of mercury, 307
Operation eventualities, 32
Operations, fit time for, 31
Opium, 99
Os uteri, closure of, 154, 284
malformation of, 284
ulceration of, 138, 294
Ovarian theory, 3
Ovariotomy, 91, 194, 248
Ovaritis, 221, 246, 287
Oviducts, inflammation of, 286
obstruction of, 286
passage of fluids through, 44
Oxalate of cerium, 264

Parturition and caustic treatment, 144, 160
Perchloride of iron, 134, 314
Perforation of the uterus, 26
Perineal pad, 227
Peritonitis, 34
Perpendicular examination, 19
Pessaries, Dr. Cutter's, 236
expanding, 234
globe, 227
for anteflexion, 233
prolapsus, 226
retroflexion, 233
uterine versions, 234
Pelvic peritonitis, 217, 219, 249, 287
surgery, 32
Phosphorus, 68
Piline, not spongio-piline, 53
Pills, 318
Plasters, 53, 310
Plugging the cervix, 193
vagina, 193
Podophyllin, 174
Polypi, 185, 243, 286
Porte-caustique, 23
Post-partum flooding, 186
Potassa caustica, 148, 150, 159, 266
fusa c. calce, 148
Poultices, 53
vaginal, 54
Powder, cooling, 320

Powder to the womb, 24
Practice, how to get it, 7
Practitioner, his behavior, 7
Pregnancy a cure for flexions, 224
right management of, 293
uterine fibroids, 294
hypertrophy, 294
vomiting of, 260
Prescribing, art of, 15
Pressure in uterine surgery, 24
Prevention of diseases in women, 289
metrorrhagia, 186
Procidentia, 226
Prolapse of vagina, 241
womb, 219
Prolapsus, 226
Prognostic of uterine diseases, 8
Pruritus, vaginal, 237
Pseudo-narcotism, 88
Pudendal affections, 140
Puerperal convulsions, 114
mania, 115
Purgatives, 125

QUACKERY, a new form of, 15
Quinine, 68, 319

RAILWAY travelling, 49
Ready-made plasters, 53
Rectal examination, 18
suppositories, 315
Rectocele, 271
Rectum, examination of, 18
inflammation of, 270
paralysis of, 271
Retention of menses, 154, 218
urine, 253
Rheumatism, 198
Rest in diseases of women, 47, 158, 223
Retroflexion, 216, 233, 284
Retroversion, 216, 219, 235, 283
Ring pessaries, 235
Ruspini's styptic, 206

SAFFRON, 177
Salpingitis, 287
Sulphur, 126
Savine, 176, 316
Scarification, 23, 125
Schwalbach, 77
Scrofula, 200
Seaside, 76
Sea-tangle bougies, 39
Secondary syphilis, 202
Sedative medication, 81
Sedatives, administration of, 96
cerebral indication of, 91
ganglionic, 94
ovario-uterine, 94
as emmenagogues, 171
hæmostatics, 189
Sewing-machines, 48
Sexual stimulants, 175
Shock a sedative, 108
an emmenagogue, 174
Signs of virginity, 14
Sleep, 52
Specifics, 195
Speculum examination, 20, 21
Spermatozoa, 286
Spinal curvature, 272
Sponge-bath, 71
pessary, 230
tents, 35, 38
Spontaneous orgasm, 88
Statistics of displacements, 219
sterility, 206, 280
Stem-pessaries, history of, 210
Sterility, 274
Strength of constitution, 63
Stains, removal of, 321
Stimulants, 51
Stricture, cervical, 284
of cervix, 142, 148
vagina, 241, 281
Strychnia, 68, 177
Subinvolution, 296
Sulphate of zinc, 134
Sulphuret of carbon, 177
Superinvolution, 296
Suppositories, rectal, 59, 315
vaginal, 60, 315
Surgery in gynecology, 4
Syphilis, 201, 286
Styptics, 193
Syringe, 23
Syrups, medicated, 317

TOBACCO, 107
Tartar emetic, 191

Tenaculum, 23
Therapeutic lint, 53
Tinctures, 320
Tonic medication, 63–68
Tonics as emmenagogues, 169
Tow-pessary, 230
Training, medical, 74
Travelling a tonic, 49, 76, 292
Trinitrate of bismuth, 239, 309
Turkish bath, 73
Turpentine, 192, 317

Ulceration, cervical, 138, 143, 151
pseudo-membranous, 151
scrofulous, 200
various, 294
Undersized womb, 282
Univalve speculum, 21
Urethra, inflammation of, 251
tumor of, 250
Urethrocele, 251
Uriage, 197
Uterine dietetics, 46
sound, dangers of, 26
use of, 221

Vagina, prolapse of, 241
Vaginal cauterization, 231
contraction, 241
distention, 241
excision, 231
injections, 54, 56, 57
obliteration, 281
Vaginal poultices, 54
prolapse, 241
suppo itories, 315
suture, 231
Vaginismus, 281
Vaginitis, 139, 240
Valerian, 101
Vaseline, 308
Vegetations, 215
Venesection, 109
Veratria, 102, 109, 308
Veratrum viride, 191
Virginity, signs of, 14
Vulsellum, 23
Vomiting, 260
Vulva animalculæ, 238
cryptogams, 238
folliculitis, 238
Vulvo-vaginal glands, 240

Wax bougies, 29
Wedding tours, 76, 292
Wines, 51
Womb, descent of, 219
extirpation of, 208
fibroid degenerescence of, 243
laceration of, 298
ulceration of, 138, 294
Women doctors, 2
Wools, medicated, 320

Zinc-arrows, 162
Zwancke's pessary, 229

