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PRACTICAL MANUAL

OF

DISEASES OF WOMEN

AND

UTERINE THERAPEUTICS.

For Students and Practitioners.

BY

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To

THE MEDICAL GRADUATES

OF THAT UNIVERSITY WITH WHICH HE WAS,

FOR A PERIOD OF TWENTY-TWO YEARS, CONNECTED, EITHER AS

STUDENT OR TEACHER,

THIS BOOK IS INSCRIBED

IN RECOLLECTION OF THE HAPPIEST PERIOD OF HIS LIFE

BY

THE AUTHOR.

PREFACE TO THE SECOND EDITION.

THAT a large edition of this work should have been exhausted within five months from its publication, is in itself the most gratifying proof of the manner in which it has been received by the profession. The author cannot but feel grateful for the impartial spirit in which, with one striking exception, the book has been referred to by the medical journals. The object of the work, and the reasons for its design, are sufficiently set forth in the preface to the first edition. In its present form it has been carefully revised, yet, in the main, little altered. A chapter on affections of the rectum, more especially appertaining to those diseases which are commonly met with in women, and which are influenced by uterine conditions, has been added. Also the author has thought well to include two chapters on the diagnosis and treatment of some affections of the mammary gland. The appendix on health resorts has been amended and enlarged. Some remarks on the ætiology of spasmodic dysmenorrhœa, and a description of Dr. Alexander's operation on the round ligaments, concludes the Manual. Finally, the writer has felt that he was in some degree justified in undertaking the 'exceptionally difficult' task which he accepted by the several letters of approbation of the work received from many distinguished physicians and gynecologists, while he has been still more pleased to receive the congratu-

lations of a number of those in busy general practice, for whom the information it contains was intended, and who have not time to wade through too po nderous, nor the inclination to master too technical, a treatise. Nor can he refrain from expressing a hope that the flattering compliment paid him by the distinguished Gulstonian lecturer of 1884 * may, in some degree, come practically true, when he says that the preface (of the first edition of the Manual) "must prove a pillar of support to those who hold like opinions on the mischief of modern specialism."

H. MACNAUGHTON JONES.

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CAVENDISH SQUARE.

* 'Visceral Neuroses,' by T. Clifford Allbutt, M.D., etc., Gulstonian Lecturer, 1884. J. and A. Churchill : London.

PREFACE.

WHEN, some months since, the publishers of this work invited me to write a Manual on Diseases of Women, for the use of students and practitioners, I accepted the task with grave misgivings of the possibility of writing any comparatively small book which would do justice to this important subject. Yet many years of experience, both as a clinical teacher and lecturer on obstetrics, had taught me that students rarely mastered the more comprehensive gynecological treatises, which I was myself in the habit of recommending to my class: such, for instance, as those of Dr. Gaillard Thomas, Dr. Robert Barnes, Dr. Emmet, Dr. Karl Schroeder, etc. The course of obstetrics and gynecology, embracing both practical midwifery and the study of the diseases of women, is a most extensive one. How inadequate is the time at the disposal of a lecturer to complete a satisfactory course even of obstetrics in one winter session, is known only to those teachers who have had experience of the effort to do so. The obstetric course is not generally attended until the third or fourth winter session. The student of that year is endeavouring to attend his hospitals, to complete his anatomical and physiological knowledge, and is engaged in

learning the elements of pathology and the theory and practice of medicine and surgery. Naturally the ordinary student complains that he cannot read the larger standard works on 'Diseases of Women.'

There is another difficulty in the way of the student and his acquisition of gynecological knowledge. In any large Metropolitan hospital, and school connected with it, this may not so much be felt, but it certainly is in those schools with which there is not associated a large extern department for the treatment of women's affections. It is hard for a student to take a mental grasp of that which he has not been shown practically either in the ward or theatre. The study of gynecology in this respect differs from either that of the practice of medicine or surgery, with which branches of his art, even with ordinary observation and attention, he becomes fairly familiar as he attends his hospital ward and dispensary from day to day. This facility is not, as a rule, afforded him in the examination of uterine cases. He takes up the larger work on 'Diseases of Women,' weighted with the feeling that he has to wade through pages of pathology and symptomatology, which he has never seen practically explained either at the bedside or at an autopsy.

Unfortunately, many students look on the treatment of women's affections as a 'specialty.' This is but one of the many disastrous consequences which have followed that modern parcelling out of the body into segments, and the handing over of a small piece of it to this or that specialist to exercise his speculative ingenuity in the discovery of

some diseased condition beyond the ken of the ordinary physician. A mushroom-like brood of specialists and specialties appear daily to be sprouting into existence. With some experience of 'special' work, I have come to the conclusion that, with the exception of ophthalmology and otology, there is, or rather ought to be, in the hands of most well-trained and well-educated physicians and surgeons, no necessity for that abandonment of the rightful responsibility which as physicians or surgeons they should assume to their patients. To share such responsibility with another in consultation must frequently be alike their duty and privilege. And the discharge of such duty brings at all times a pleasurable feeling to the practitioner, when he can call to his assistance a ripe and cultured experience, especially if that experience be founded on a wide and general knowledge of disease, and one which is unbiassed by the narrower views that grow out of a limited field of observation.

It is a lawful ambition of the physician or surgeon to acquire a reputation for special work in any department or departments of medicine or surgery. But he can best apply this particular knowledge, who cultivates it without neglecting to improve his acquaintance with the diagnosis and treatment of disease in other organs.

In speaking thus, I do not necessarily allude to exceptional and serious operative measures, where experience in the details of an operation or in surgical manipulation alone justifies a man in undertaking such. But these are the exceptional cases in daily practice. And it is of the every-

day duty of the physician or surgeon to his patients I am speaking.

To my view disastrous consequences have followed the public craze for specialists, and into which latter-day fashion society has been led by the profession itself. It has encouraged a feeling that accurate knowledge is only to be attained by the few, thereby tending to develop a wide-spread empiricism; it has, I believe, injured the professional standing of the general physician or surgeon by diffusing a belief in the public mind that his knowledge is of a less exact, and therefore inferior kind, and that it does not qualify him to grapple with any grave or unusual difficulty. It has tended to throw doubt on his technical skill and manipulative power.

I have instanced the sciences of ophthalmology and otology as exceptions. I do so, inasmuch as I believe that peculiarly technical and manipulative knowledge, and very *special* experience, are required for the successful treatment of a considerable proportion of ophthalmic and aural affections. Not that I think any educated physician should be deficient in a knowledge of the use of the ophthalmoscope. This I have exemplified in the conclusion of the present work.

I am aware that in writing thus, I am giving expression to views that many will regard as most unorthodox. Still, in stating them openly, I shall at least have the satisfaction of knowing that I have given honest expression to my convictions.

This volume, which I venture to place in the hand of

both student and practitioner, is not meant to take the place of such treatises as those of Barnes, Gaillard Thomas, or the most admirable and recent work of Hart and Barbour, which, as a technical work, is one of the most valuable of its size for a student that I know of in the English language. Nor do I recommend any practitioner interested in this subject to miss the pleasure of reading the enjoyable 'Lessons' of Goodell, the graphic work on 'Ovarian Tumours' by the master ovariotomist of our time, Sir Spencer Wells, the admirable treatise of Lawson Tait, or the practical lectures on 'Diseases of Women' by Matthews Duncan. These, and many other works by eminent Continental, American, and British authors, may be perused with interest and profit. I do not attempt in this book to introduce lengthy descriptions of several serious gynecological operations, such as those of Porro, Freund, ovariotomy, and some of the more complicated vaginal operations. The steps of operations in the various forms of fistulæ I do not enter into. All these operative procedures will be found fully described in the larger obstetrical works, and in treatises on general surgery.

This book, then, is simply intended as a practitioner's and student's manual. I have endeavoured to make it as practical in its teaching as possible.

I have to express my obligation to several leading London instrument-makers for their courtesy in giving me blocks of nearly all the appliances represented, especially Messrs. Arnold, Krohne and Seseman, Maw and Son, Mayer and Meltzer, and Messrs. Matthews.

I have to thank my friend Dr. J. Hill Gibson for his kindness in reading and assisting in the correction of the proof-sheets.

If the book is found useful as a safe guide in practice by the practitioner, and an assistance in the study of this branch of his profession by the student, it will have fulfilled its mission and the object of the author.

141, Harley Street, W.
May, 1884.

LIST OF ILLUSTRATIONS.

FIG.		PAGE
1.	The Vulva (Hart and Barbour)	2
2.	Section of the body of a woman, aged twenty-five, showing the Pelvic Viscera and Perinæum. (Adapted from 'Atlas of Descriptive Anatomy.') (After Heitzman)	6
3.	Distended Rectum and Empty Bladder (after Braune)	7
4.	Distended Bladder (after Braune)	7
5.	Genu-pectoral Position	11
6.	Vertical Section of Uterus (Ramsbotham)	12
7.	Lateral Section of Uterus (Ramsbotham)	13
8.	Uterus pressed upon by Distended Bladder and Rectum (after Braune)	13
9.	Uterus and Appendages	16
10.	Conical Cervix	19
11.	Os Uteri of Pregnancy (Ramsbotham)	19
12.	Congenital Stenosis (Schroeder)	20
12*.	Semi-prone position for examination	*to face p.* 32
13*.	Semi-prone position for examination and manipulation	„ „ 32
13.	Hall Davis's tapering and bevelled Speculum	34
14.	Ricord's Speculum	34
15.	Bivalve Speculum of Dr. Robert Barnes	35
16.	Sims's Duck-bill Speculum	35
17.	Neugebaur's Speculum	36
18.	Fenestrated Speculum (Cusco's screw)	36
19.	Fergusson's Speculum	37
20.	Playfair's Probe	38
21.	„ „	38
22.	Sponge-holder	38
23.	Small Portable Sound	39
24.	Sound of Duncan, graduated on the concave side	39
25.	Sims's pliable Probe	39
26.	Simpson's Sound	39
27.	Rectangular Speculum Forceps	39
28.	Arnold's Speculum Forceps	39
29.	Sims' Tenaculum	39

FIG.		PAGE
30.	Introduction of Uterine Sound	41
31.	Junker's Inhaler	46
32.	Aspirator	47
33.	Tupelo Tent	48
34.	Sponge Tent	48
35.	Laminaria Tent	48
36.	Urethral Forceps	49
37.	Tent Introducer (Arnold)	49
38.	Dr. Robert Barnes's Tampon Introducer	49
38*.	Appliance of Dr. Duke (Dublin), for removing tenacious discharge from Cervix	49
39.	Author's Uterine Bougies	51
40.	Lawson Tait's Dilators	52
41.	Abdomino-vaginal Examination (Schroeder)	58
42.	Recto-vesical Examination in complete Inversion of the Uterus	60
43.	Lane's Rectal Speculum	70
44.	Rectal Speculum	71
45.	Rectal Speculum (Gowland's)	71
46.	Bryant's Urethral Speculum	72
47.	Arnold's combination of Barnes's Dilator and Higginson's Syringe	72
48.	Urethral Dilator (Maw)	72
49.	Maw's continuous Syringe	73
50.	Arnold's Enema Syringe	74
51.	Bozeman's Retractor	74
52.	Atthill's Trocar and Cannula	76
53.	Author's Speculum Slice (Maw)	77
54.	Aspirating Needle (Matthews)	78
55.	Paquelin's Thermo-Cautery	78
56.	Platinum Cautery	79
57.	Simpson's Hysterostome (Dr. Barnes's improvement)	79
58.	Kuchenmeister's Scissors	80
59.	Marion Sims's Knife for division of the Cervix	81
60.	Greenhalgh's Metrotome	82
61.	Wells's Trocar	83
62.	Guarded Trocar of Sir Spencer Wells	83
63.	Bistoury	87
64.	Hall's Lancet and Sponge-holder	92
65.	Intra-Uterine Injector	94
66.	Ointment-Positor (Dr. Robert Barnes)	94
67.	Intra-Uterine Injector	94

FIG.		PAGE
68.	Porte-Caustique for the introduction of Dr. Braxton Hicks's fused sticks	94
69.	Author's Intra-Uterine Medicator	94
70.	Small Platinum Crucible for nitrate of silver	95
71.	Bell-shaped Reophore	112
72.	Laryngeal Reophore which may be used for the Uterus	112
73.	Stem of Barnes (Galvanic)	113
74.	Rigid Galvanic Stem	113
75.	Simpson's Galvanic Stem	113
76.	Leclanche's 20-cell Constant Current Battery	124
77.	Greenhalgh's Intra-Uterine Soft Stem	128
78.	" " "	129
79.	Vaginal Douche	133
80.	Hayes's Tube	133
81.	Degrees of Anteversion (Schroeder)	141
82.	Open Hodge	145
83.	Vulcanite Hodge	145
84.	Hodge's Rubber Pessary	146
85.	Metal (Smith-Hodge)	146
86.	Greenhalgh's modification	146
87.	Galabin's Pessary	148
88.	Hewitt's Pessary	149
89.	Hewitt's Cradle applied	149
90.	Blackbee's Pessary	149
91.	Thomas's Movable Lever	150
92.	Thomas's Anteversion Pessary	150
93.	Fowler's Pessary	151
94.	Cutter's Loop Pessary applied	151
95.	Cutter's T Stem applied	152
96.	Cutter's Soft Pessary (modified by Thomas)	152
97.	Anteflexion of Uterus (Schroeder)	153
98.	Sims's Operation for creating new Uterine Axis	158
99.	Bilateral division of the Cervix with Kuchenmeister's Scissors	158
100.	Gehrung's Pessary (Goodell)	161
101.	Hurd's Pessary applied in Retroflexion	161
102.	Hurd's Pessary in Anteflexion	161
103.	Dr. Wynn Williams's Stem	163
104.	Chambers's Stem and Introducer	163
105.	Dr. Bantock's Gilt Stem	163
106.	Thomas's Cup and Stem	164
107.	Peaslee's Stem	164
108.	Hewitt's Stem	164

FIG.		PAGE
109.	Degrees of Retroversion (Schroeder)	167
110.	Retroflexion (adapted from Schroeder)	167
111.	Bantock's Repositor	170
112.	Sims's Repositor	170
113.	Showing rotation of Sound in Retroversion (adapted from Hart and Barbour)	172
114.	Thomas's modified Smith-Hodge	174
115.	Smith-Hodge Pessary in position (after Goodell)	174
116.	First step of introduction	176
117.	Second step of introduction	176
118.	Pessary in position	176
119.	Cutter's Retroversion Pessary	178
120.	Case of Author's, complicated with Cystocele	183
121.	Showing gradual descent of Uterus (Thomas)	183
122.	Prolapsus with Cystocele (after Schroeder)	184
123.	Hypertrophic elongation of Cervix (Schroeder)	184
124.	Abdominal Support	189
125.	Hodge's Pessary with crossbars of Greenhalgh	191
126.	,, ,, ,,	191
127.	Godson's modification	192
128.	Vulcanite (Zwanck)	192
129.	Watch-spring Ring	192
130.	Barnes's Cup and Stem	193
131.	Napier's Prolapse Pessary	193
132.	Cutter's Prolapsus Pessary	194
133.	Light Pelvic Strap for applying Perinæal Pad (Higginson)	194
134.	Inflating Pessary	195
135.	Air-pad Pessary (Mayer and Meltzer)	195
136.	Palfrey's Perinæal Pad	196
137.	Absent Perinæum (after Martin)	197
138.	Scissors of Sims, curved on the flat	200
139.	Self-retaining Catheter (Skene-Goodman)	200
140.	Self-retaining Catheter (Sims)	200
141.	Ordinary Self-retaining Sigmoid Catheter	201
142.	Denuded Surface, Anus involved (Goodell)	201
143.	Denuded Surface, Anus not involved (Goodell)	201
144.	Perinæal Needles	203
145.	Needle-holder of Sims	203
146.	Conjoined Examination—Inverted Uterus	210
147.	Prolapsus Uteri (Schroeder)	210
148.	Outline Diagram of Complete Inversion (adapted from Thomas)	211

FIG.		PAGE
149.	Outline Diagram of Partial Inversion (adapted from Thomas)	211
150.	Submucous Fibroid	211
151.	Outline Diagram of Polypus at summit of Uterine Cavity (adapted from Thomas)	211
152.	Outline Diagram of Polypus of Cervix (adapted from Thomas)	212
153.	Outline Diagram of Polypus with long pedicle attached to the summit of uterine cavity; the cervical canal contracted on pedicle	212
154.	Reduction of Inverted Uterus (Emmet)	214
155.	White's Cup-repositor (Thomas)	215
156.	Removal of Polypus by écraseur and volsella (adapted from Atthill)	220
157.	Author's Polyptome and Forceps Saw	222
158.	Dressing the Cervix with Sims's Speculum and Playfair's Probe	232
159.	Stellate Laceration (Emmet)	241
160.	Sims's Elbow Scissors	244
161.	Emmet's Needle and Holder	244
162.	Emmet's Operation—denuded surface and sutures (Emmet)	245
163.	Sutures passed	245
164.	Sutures applied	245
165.	Sims's Curette	252
166.	Collection of Serum in the Peritoneal Cavity—Perimetritis Serosa (Schroeder)	254
167.	Leiter's Tube applied	269
168.	Leiter's Temperature Regulator	269
169.	Retro-hæmatocele (Schroeder)	272
170.	Exploring Trocar and Cannula	276
171.	Interstitial and Sub-peritoneal Fibroid (adapted from Schroeder)	279
172.	Cauliflower Excrescence growing from Cervix Uteri (after Sir J. Simpson)	296
173.	Scrapings from Cancer (Hart and Barbour)	297
174.	Simon's sharp Spoon	305
175.	Chassaignac's Chain Écraseur	305
176.	Carcinoma of the Body of Uterus (after Sir J. Simpson)	311
177.	Paquelin's Cautery Scissors	313
178.	Drysdale's Cells and the Microscopic Appearances in Ovarian Fluid	323
179.	Proliferous Cells (Wells)	324
180.	Fowlis's Malignant Cell-groups (Hart and Barbour)	325
181.	Ovarian Tumour (after Wells)	330

FIG.		PAGE
182.	Ovarian Tumour showing distended veins (after Bright) -	331
183.	Dull Area in Ovarian Tumours and Ascites (Barnes) -	333
184.	Vaginal Rest (Sims) - - - -	347
185.	Vaginal Medicated Suppositories - - -	347
186.	Improved Urinal (Matthews) - - -	361
190.	Four-bladed Rectal Speculum of Allingham - -	395
191.	Ointment Applicator - - - -	403
192.	Rectal Probe and Director - - - -	406
193.	Flat Pile Scissors - - - - -	406
194.	Pile Forceps - - - - -	406
195.	Pile Forceps - - - - -	406
196.	Salmon's Pile Hook - - - -	406
197.	Straight (Spring) Pile Scissors - - -	406
198.	Herbert Allingham's Clamp - - - -	408
199.	Allingham's Ligature Tractor - - -	412
200.	Eczema of Nipple, with Scirrhus Mass - - -	438
201.	Demonstration Speculum of Author ($\frac{1}{4}$-size) - *to face p.*	456
202.	Shows Application of Speculum - - „ „	456
203.	Appliance folded ($\frac{1}{4}$-size) - - - „ „	456

CONTENTS.

CHAPTER I.

(INTRODUCTORY.)

ANATOMICAL FACTS BEARING ON GYNECOLOGICAL PRACTICE.

PAGE

The vulva; shape; its mucous surfaces; bulb of Kobelt; pudendal hæmorrhage; the vulvo-vaginal gland; cyst of; hernia; the clitoris; position; passage of catheter; masturbation; medical examinations; the urethra; its length, distensibility, and dilatability; the vagina; its muscularity, elasticity, and mobility; its connections; misuse of pessaries; its mucous membrane; the hymen; imperforate hymen; perinæum; relaxation of; laceration of; genu-pectoral position; the pouch of Douglas; examination of; rectal exploration; the uterus; measurements; lessons learned from these; its position; its relations; displacements of; dilatation of cervix; uterine ligaments and pelvic fascia; functions of; infra-vaginal portion of uterus and os uteri; shape and size; conoidal; uterine and vaginal secretions; congenital stenosis; the uterine tissues; porous nature of; the Fallopian tubes; position of; patency of; the ovary; ovulation; morbid states of; the rectum; neglect of; morbid conditions of - - 1

CHAPTER II.

EXAMINATION OF A CASE.

Unnecessary examinations; appliances required; history of the case; age; pregnancies and abortions; occupation and habits; menstruation; discharges; bed or couch; tape-measure; stethoscope; speculum; different kinds of; various instruments; the uterine sound; instructions for passing; examination of urine; clinical thermometer; anæsthetics; aspirating needles; tents; uterine dilators; microscope - - - - - - 25

CHAPTER III.

EXAMINATION OF A CASE (*continued*).

The abdomen; shape; umbilicus; skin; measurements; palpation; percussion; digital examination; conjoined examination; abdo-

PAGE

minal-vaginal; recto-vaginal; recto-vesical; utero-abdominal; utero-rectal; other steps; speculum; use of; tents; aspiration; anæsthesia; rectal exploration (Simon's method); discharges, watery, mucous, sebaceous, hæmorrhagic; physometra; the microscope; exploratory incision; rectal specula; urethral specula; syringes - - - - - - - - 53

CHAPTER IV.

SOME MINOR GYNECOLOGICAL OPERATIONS.

Applying nitric acid to the cavity of the uterus; depletion of the cervix; speculum spout; aspiration; the actual cautery; incision of the cervix uteri; division of the cervix uteri and the internal os; paracentesis abdominis; vaginal paracentesis; puncturing a pelvic hæmatocele - - - - - - - - 75

CHAPTER V.

MINOR OPERATIONS (*continued*).

Intra-uterine medication; agents; author's intra-uterine medicator; fluids; ointments; suppositories; application of potassa fusa and potassa cum calce - - - - - - - - 88

CHAPTER VI.

DISORDERS OF MENSTRUATION.

Ovulation and menstruation; abnormal menstruation; disorders of; amenorrhœa; differential diagnosis; pregnancy; anæmic and chlorotic states; accidental influences; congenital defects; indications for treatment; therapeutics; iron; arsenic; quinine; strychnine; ergotine; electricity - - - - - 97

CHAPTER VII.

DYSMENORRHŒA.

Pain, some general remarks on; Charcot on ovarian hysteria; congestive, obstructive and spasmodic; general treatment; hysterical and neuralgic cases; examination of; plethora; Weir-Mitchell's treatment; massage; how carried out; membranous dysmenorrhœa - - - - - - - - 115

CHAPTER VIII.

MENORRHAGIA, METRORRHAGIA, AND LEUCORRHŒA.

Treatment of menorrhagia; heat; cold; tampon; vaginal plug; local therapeutic agents; leucorrhœa - - - - - 132

CHAPTER IX.

UTERINE DISPLACEMENTS—ANTEVERSION AND ANTEFLEXION.

PAGE

Predisposing causes; results, direct and indirect, of uterine displacements; anteversion; diagnosis; treatment; pessaries; indications for; Hodge; Smith-Hodge; Greenhalgh; rules for the application of pessaries; Galabin's pessary; Hewitt's; Blackbee's; Thomas's movable lever; Thomas's anteversion; Fowler's; Cutter's loop; Cutter's T-stem; Cutter's soft pessary; anteflexion; causation; symptoms; diagnosis; treatment; division of cervix; precautions to adopt before and after; pessaries; Gehrung's; Hurd's; intra-uterine stems; Wynn Williams's; Chambers's; Bantock's; Thomas's; Peaslee's; Hewitt's; glass stem of Sims - - - - - - - - 139

CHAPTER X.

UTERINE DISPLACEMENTS—RETROVERSION AND RETROFLEXION.

Causation; symptoms; diagnosis; treatment; uterine sound in; repositors; Sims's and Bantock's; method of introducing sound, and use in retroversion; sponge pessary (Thomas); Goodell on the lever pessary; Thomas's modified Smith-Hodge; introduction of lever pessary; celluloid rings of Maw; Cutter's retroversion pessary; retroflexion; causation; diagnosis; treatment; Schroeder on intra-uterine stem in retroflexion - - - - - 166

CHAPTER XI.

PROLAPSUS.

Stages of; pathology of; hypertrophic elongation; causation; symptoms; diagnosis; treatment; abdominal supports; method of reduction; pessaries; classification of; Greenhalgh's modification of Hodge; Godson's modification of Zwanck; vulcanite Zwanck; watch-spring; Barnes's cup and stem; Napier's; Cutter's prolapse; pelvic strap; inflating pessary; air-pad pessary; Palfrey's perinæal pad; absent perinæum; function of the perinæal body; Gaillard Thomas on; operation; Tait's; elytrorrhaphy; episiorraphy; deferred operation for lacerated perinæum; self-retaining catheter; Skene-Goodman; Sims; sigmoid; perinæal needles; needle-holder of Sims - - - - - - 182

CHAPTER XII.

ELONGATED CERVIX, COMPLICATING PROLAPSE OF THE UTERUS OR VAGINA.

Views of Taylor; Huguier; supra and infra-vaginal; causation; treatment; ascent of the uterus - - - - - 205

CHAPTER XIII.

INVERSION OF THE UTERUS.

PAGE

Etiology; causes; signs and symptoms; differential diagnosis; conjoined examination; partial inversion; diagnosis from submucous fibroid; intra-uterine polypi; prognosis; treatment; palliative; taxis and pressure; amputation - - - - - 208

CHAPTER XIV.

POLYPUS UTERI.

Varieties; diagnosis; positive signs; negative signs; symptoms; treatment; Atthill's method of removal; Simpson's polyptome; author's polyptome - - - - - - 217

CHAPTER XV.

UTERINE INFLAMMATORY STATES, ACUTE AND CHRONIC.

Hyperæmia (active and passive); symptoms and physical signs; treatment; passive hyperæmia; acute metritis and endometritis; causation; symptoms and physical signs; diagnosis; prognosis; treatment; chronic metritis; chronic cervical endometritis; classification of causes; predisposing and exciting; symptoms and physical signs; prognosis; treatment; local; general; chronic corporeal endometritis; pathology; classification of causes; symptoms and physical signs; treatment; classification of; subinvolution; pathology; diagnosis; symptoms; treatment - - 224

CHAPTER XVI.

LACERATION OF THE CERVIX.

Varieties; causes; diagnosis; consequences; symptoms; treatment; operative measures; instruments required; Emmet's operation - 241

CHAPTER XVII.

EROSION AND GRANULAR DEGENERATION OF THE CERVIX.

Pathology; causation; symptoms and physical signs; treatment; general; local; topical applications; vaginal tampons; ointments; depletion; vaginal suppositories; management of endometritis and laceration of the cervix; general hints for; follicular degeneration; diagnosis; treatment; Sims's curette - - - 247

CHAPTER XVIII.

PERI-UTERINE AND OTHER INFLAMMATIONS.

Classification; perimetritis; causation; pathology; symptoms and physical signs; prognosis; treatment; parametritis; pathological ana-

PAGE

tomy ; Matthews Duncan on ; diagnosis ; symptoms and physical signs ; table of differential diagnosis ; parametritis ; perimetritis ; fibrous tumours; hæmatocele; treatment; attention to the rectum; oöphoritis ; etiology ; causation ; pathology ; diagnosis ; symptoms and physical signs ; treatment ; salpingitis ; etiology ; causation and results ; dilatation of the Fallopian tubes ; stricture ; collection of blood; adhesions ; displacements ; cysts of ; diagnosis - - - - - - - - - 253

CHAPTER XIX.

PELVIC HÆMATOCELE.

Causation ; classification of causes ; symptoms and physical signs ; diagnosis ; prognosis ; treatment - - - - - 272

CHAPTER XX.

FIBROID TUMOURS.

Etiology ; pathology ; varieties of ; classification ; diagnosis ; differential signs of fibroid tumour ; negative signs ; the uterine sound ; dilatation by tents and exploration ; symptoms ; pain ; pelvic symptoms ; sterility ; results, table of ; fibro-cystic tumours, table of ; diagnostic signs ; treatment, palliative and operative ; palliative—to reduce hyperæmia and congestion, to control and prevent hæmorrhage, to promote absorption of the tumour, to subdue pain and relieve rectal and vesical distress ; table of special operative measures and the various methods of treatment of fibroid tumours ; Battey's operation ; table of results ; Tait's operation ; table of 439 cases of abdominal section by Lawson Tait - - 277

CHAPTER XXI.

CANCER OF THE UTERUS.

Etiology ; varieties ; pathology ; medullary ; cauliflower excrescence ; carcinoma and epithelioma ; pathology ; symptoms and physical signs ; hæmorrhage ; fœtid discharge ; special signs of malignancy ; table of differential diagnosis ; prognosis ; treatment, radical, palliative ; classification of remedies ; attention to the rectum ; Simon's spoon ; Chassaignac's écraseur ; amputation of the cervix, how performed ; Marion Sims's method ; Schroeder's operation ; method of using scoop of Simon ; extirpation of the entire uterus through the abdominal wall ; palliative and general treatment ; Clay of Birmingham ; sedatives ; internal constitutional remedies ; hæmorrhage ; carcinoma of the body of the uterus ; diagnosis ; treatment ; sarcoma of the uterus ; etiology and diagnosis ; treatment - - - - - - 291

CHAPTER XXII.

AFFECTIONS OF THE FALLOPIAN TUBES AND OVARIES.

PAGE

Ovarian diseases; classification of in tabular form; etiology of; pathology of; the pedicle; how composed; extra-ovarian cysts; contents of ovarian cysts; chemical character of the fluid of ovarian cysts; table of organic contents; Drysdale, characteristic cell of; malignancy; microscopic appearances found in malignant tumours; Wells; Fowlis; causation; duration and termination; spontaneous cure of; suppuration of the cyst-wall; twisting of the pedicle; discharge of the contents; death from exhaustion; diagnosis of ovarian cysts; table of abdominal tumours liable to be mistaken for ovarian cysts; examination of a suspected case; history and early symptoms; appearance of abdomen in ovarian dropsy; after the tumour rises above the pelvis; physical signs; positive and negative; table of; diagnosis of adhesions; Sir Spencer Wells on - - - - - 315

CHAPTER XXIII.

SOME AFFECTIONS OF THE VAGINA.

Vaginismus; causes; symptoms and signs; treatment; general and local; operative measures; vaginitis; acute and chronic; causation; pathology; course and symptoms; granular vaginitis; gonorrhœal vaginitis; symptoms and signs; treatment of simple vaginitis; gonorrhœal vaginitis, treatment of - - - 344

CHAPTER XXIV.

ATRESIA OF UTERUS, VAGINA AND VULVA—PROLAPSE OF VAGINA AND CYSTIC TUMOURS.

Causation; physical signs; atresia of the uterus; symptoms; atresia of vagina; physical signs; symptoms; symptoms of inflammation and hæmorrhage from retained menses; atresia of vulva; treatment; aspiration; urinary fistulæ; prolapse of vagina; pathological anatomy; symptoms and physical signs; cystic tumours of vagina - - - - - - - 355

CHAPTER XXV.

AFFECTIONS OF THE VULVA.

Classification of; hyperæsthesia; cutaneous eruptions; remedies; special for pruritus; syphilitic states; lupus; rodent ulcer; syphilis; simple vulvitis; purulent vulvitis; follicular inflammation; phlegmonous inflammation; abscess of the vulva-vaginal

PAGE

glands; gangrene; warts and vegetations; cysts; varix; hæmatoma; hernia; hydrocele; cancer; pruritus; causes; treatment - - - - - - - - - 365

CHAPTER XXVI.

SOME URETHRAL AFFECTIONS.

Classification of; urethritis; prolapse; fistulæ; angioma; polypi; urethral caruncle; symptoms and signs; prognosis; treatment - 381

CHAPTER XXVII.

COCCYGODYNIA.

Causation; treatment - - - - - - - - 384

CHAPTER XXVIII.

STERILITY.

Classification of causes; operative measures for the cure of; responsibility in advising; evidences of constitutional syphilis - 386

CHAPTER XXIX.

THE OPHTHALMOSCOPE IN DIAGNOSIS.

Albuminuric retinitis; diabetic retinitis; leukæmic retina; Dr. de Wecker on; malignant anæmia; use in pregnancy - - 389

CHAPTER XXX.

SOME AFFECTIONS OF THE RECTUM.

Classification of; examination of the rectum; indications for; general considerations; pruritus ani; ulceration; stricture; malignant disease; abscess; fistula; hæmorrhoids; sedatives; aperients; some minor operations; excision of external hæmorrhoids; ligature of internal piles; clamp and cautery; plugging the rectum; impaction of fæces; fæcal tumours; fistula in ano; Allingham's ligature tractor - - - - - - - - 393

CHAPTER XXXI.

AFFECTIONS OF THE BREAST.

Examination of a breast; age of patient; relation to menstruation; ætiological considerations; injuries; syphilis; pregnancy and lactation; heredity; symptoms; pain; character of; physical examination of a breast; palpation; axillary glands; in inflammatory states; the probe in diagnosis; tabular statement of signs and symptoms of mammary tumours; benign, malignant - 413

PAGE

CHAPTER XXXII.

AFFECTIONS OF THE BREAST.

Classification of affections ; general observations on symptomatology and treatment ; inflammation ; general symptoms ; treatment ; preventive measures ; palliative measures ; operative ; treatment of tumours ; amputation of the breast - - - - 430

APPENDIX I.

Spas ; affections of the skin ; liver ; urinary organs ; glandular organs ; impoverished blood ; affections of women ; joints and rheumatism ; health-resorts ; sea-bathing places ; waters ; hydropathic establishments - - - - - - - - 441

APPENDIX II.

DYSMENORRHŒA.

'Spasmodic ;' classification of authors ; Dr. Matthews Duncan on ; author's views of ; treatment of by bougies - - - 445

APPENDIX III.

Alexander's operation for shortening the round ligaments in certain cases of displacement of the uterus - - - - 451

APPENDIX IV.

Demonstration speculum of author - - - - -

INDEX - - - - - - - - - 458

DISEASES OF WOMEN.

CHAPTER I.

INTRODUCTORY.—ANATOMICAL FACTS BEARING ON GYNECOLOGICAL PRACTICE.

It is outside the scope of this work to enter into a detailed description of the female pelvic organs and their relations. But a few practical anatomical lessons have to be remembered by every student and practitioner when examining or conducting a gynecological case. It is necessary in the first place very briefly to allude to these.*

Vulva (Fig. 1).—The vulvar orifice is elliptical in shape and comprises the mons veneris, labia majora, labia minora, clitoris, meatus urinarius, vestibule, fossa navicularis, fourchette and hymen. It varies in size in different individuals. In some women the vulvar opening is contracted. Both its size and elliptical shape influence us in the choice and method of introduction of a speculum, in the virgin, and in sensitive women. The best specula are those of a tapering form, or such as expand with two or three blades, on the principle of Cusco. Occasionally there is complete atresia of the vaginal orifice. Here it will be necessary to interfere surgically. The sebaceous follicles on the inner surfaces of the labia, with the adjacent mucous membrane, offer to all contagious secretions a large surface for the retention of fluids, septic

* The best recent works for students I know of, on the anatomy of the pelvic organs, are those of Drs. Hart and Barbour ('Atlas and Manual').

particles, or any specific virus. On these membranes we find, occasionally, in unhealthy states of the system, aphthous or gangrenous sores, specific ulcers, purulent discharges; in children noma vulvæ. Their exposed position renders them

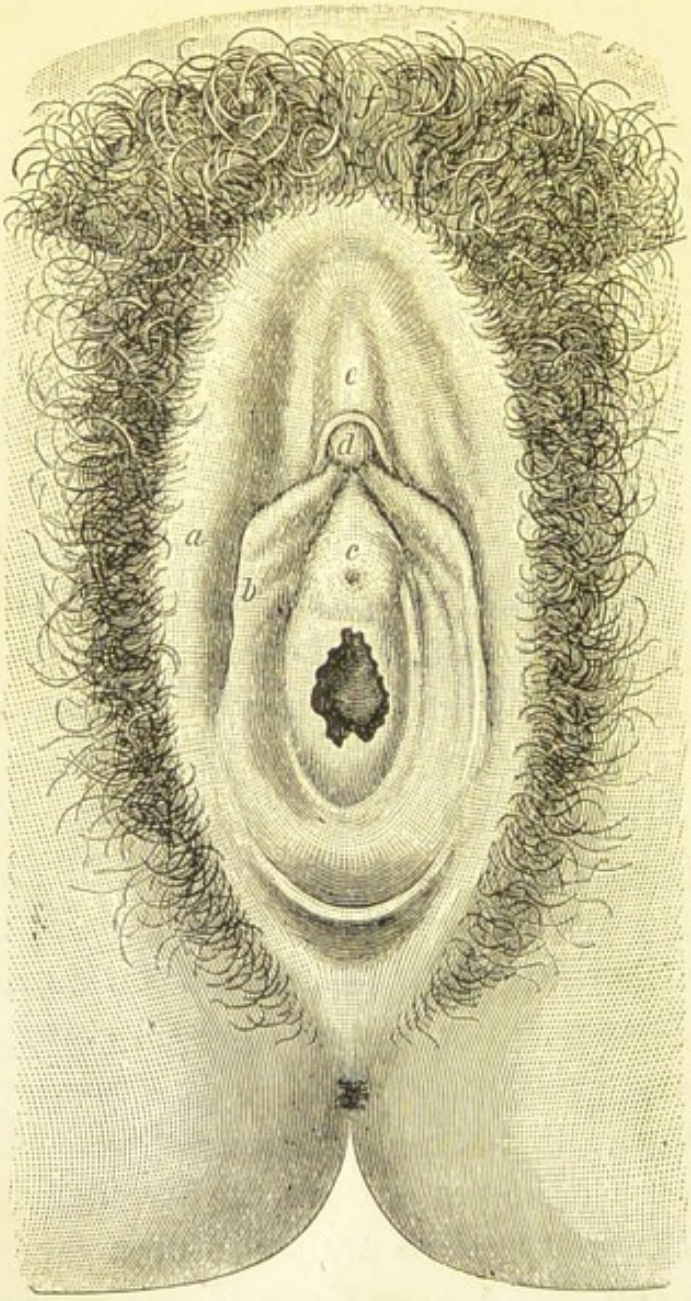


FIG. 1.—The Vulva. *a*, Labia; *b*, Labia minora; *c*, Meatus urinarius; *d*, Glans clitoris; *e*, Clitoris; *f*, Mons veneris.

specially liable to injury, either from accident or violent intercourse. The apposition of these mucous surfaces, and the consequent irritation produced by friction during exercise, or in inflammatory states of the vagina, where we have unhealthy discharges, causes a sense of heat in the vulva,

and the other symptoms of vulvitis. During the exanthemata, in puerperal and other fevers, smallpox, measles, scarlatina, these parts are occasionally inflamed. From what I have just said of the predisposition of the follicles and mucous membrane to inflammation, their occasional exposure to irritating secretions, and the effects of uncleanliness and injuries, we have, in the abundance of cellular tissue found under the mucous membrane, a ready explanation of the frequency with which phlegmonous inflammation attacks the vulva. Beneath the labia is the vascular bulbous hirudiniform body, the bulb of Kobelt, which is composed of a large plexus of veins. In this anatomical arrangement we have an explanation of pudendal hæmorrhage and thrombus. I have seen fatal hæmorrhage follow from malignant ulceration of one labium, notwithstanding that every means of treatment was used, including perchloride and persulphate of iron, various astringents, actual (Paquelin's) cautery, combined with plugging of the vaginal canal, an external compress, and a firm T-bandage. The large vascular supply of the vulva accounts, also, for the occurrence of septic poisoning and septicæmia, which at times follow injuries and abscess of the vulva, from the breaking down of thrombus and the exposure of coagula. From these remarks it is evident that cleanliness is the first essential of treatment in any case of vulvar inflammation, and that neglect of cleanliness leads to many of the affections we find attacking this part. The vulvo-vaginal gland occasionally has its duct occluded, and here, as elsewhere, when this occurs, over-distension of the duct may follow, with inflammation of the lining membrane spreading to the gland, arrest of secretion, and abscess in the gland; or hyper-distension of the gland and the formation of a cyst. The presence of a defined tumour at either side of the vulva, varying in size from a large nut to a pigeon's

egg, painful and fluctuating, is pretty characteristic. The free use of disinfecting solutions, as carbolic solution ($\frac{1}{40}$) or Condy's fluid, is indicated, when any incisions are made for the relief of pus in vulvitis. The analogy of the labia to the male scrotum is obvious. As the loop of intestine descends with the spermatic cord in the male to the scrotum, so it passes with the round ligament to the labium in the female. Care must be taken not to mistake a painful hernia of the labium for an abscess. Unless there be strangulation, the hernia returns with the horizontal posture and pressure, and a truss with a perinæal strap may be worn to retain it. The obliteration of the canal of Nuck explains the comparative rarity of inguinal hernia in the female. Yet a hydrocele of the round ligament may occur. (See Gaillard Thomas on Pudendal Hydrocele: 'Diseases of Women,' fifth edition.

THE CLITORIS.—This may be hypertrophied and abnormal in size. We should remember its position at the commencement of the vestibule half an inch behind the anterior angle formed by the labia. It must be avoided in digital examinations, by keeping to the rectal wall of the vagina, and when passing the catheter, by arriving at the meatus through the guide afforded in the cord-like feel of the urethra. If beginners have a difficulty in hitting off the orifice of the urethra, or there be any delay in finding it, it is far less distressing to the patient, and saves useless bungling, to separate the thighs and gently drawing apart the labia to find the urethral opening. The operation of clitoridectomy for various disorders of the nervous system, more especially epilepsy and hystero-epilepsy, brought on by masturbation, is not an accepted operation in this country. Yet masturbation leads to every form of nervous mischief in women. Rather must we combat it by judicious moral means, healthier mental and physical occupations and enjoyments.

Even if we do not lead the patient to believe that we suspect the habit, we must by the directions we give in her hearing, or to her, let her feel that such a practice, or any that leads to undue excitement, is bad for her. Next to masturbation, too frequent medical examinations—as often demanded by the woman as they are unnecessary for any therapeutical or diagnostic purpose on the physician's part—are to be condemned. The obstetric art is made the opprobrium of scientific medicine if uncalled-for examinations are made.

THE URETHRA.—The shortness of the female urethra saves the woman the penalty paid for every additional inch in length of the male canal. Its dilatability admits of digital exploration of the bladder, after dilatation with an ordinary urethral dilator, a small glove-stretcher, or any uterine dilator. It is not necessary to put a patient to the slow torture of sea-tangle or tupelo dilatation. Its distensibility renders litholapaxy (Bigelow's operation) or lithotrity, comparatively, an easy operation in the woman. We never can experience any difficulty in relieving the female bladder. The stem of an ordinary pipe, a straw, a goose-quill, any short tube over three inches long, will successfully accomplish this necessary operation, if we do happen to forget our catheter. Any little warty growth about the nymphæ or urethra should demand our attention; so also any discharge pouring from its orifice. In ordinary vaginitis the urethra has not generally an inflamed, pouting appearance. It frequently has in gonorrhœal inflammation. (I shall refer to caruncle of the urethra further on.) Warty conditions and hypertrophied states of the nymphæ occasionally occlude the orifice of the urethra.

THE VAGINA.—This canal, about the length of the forefinger, is narrow below, and very distensible in women who have borne children, widening at its uterine extremity;

this dilatability explains, especially in atonic states of its walls, the large accumulations of gas or fluid that collect in the vagina. The muscularity and elasticity

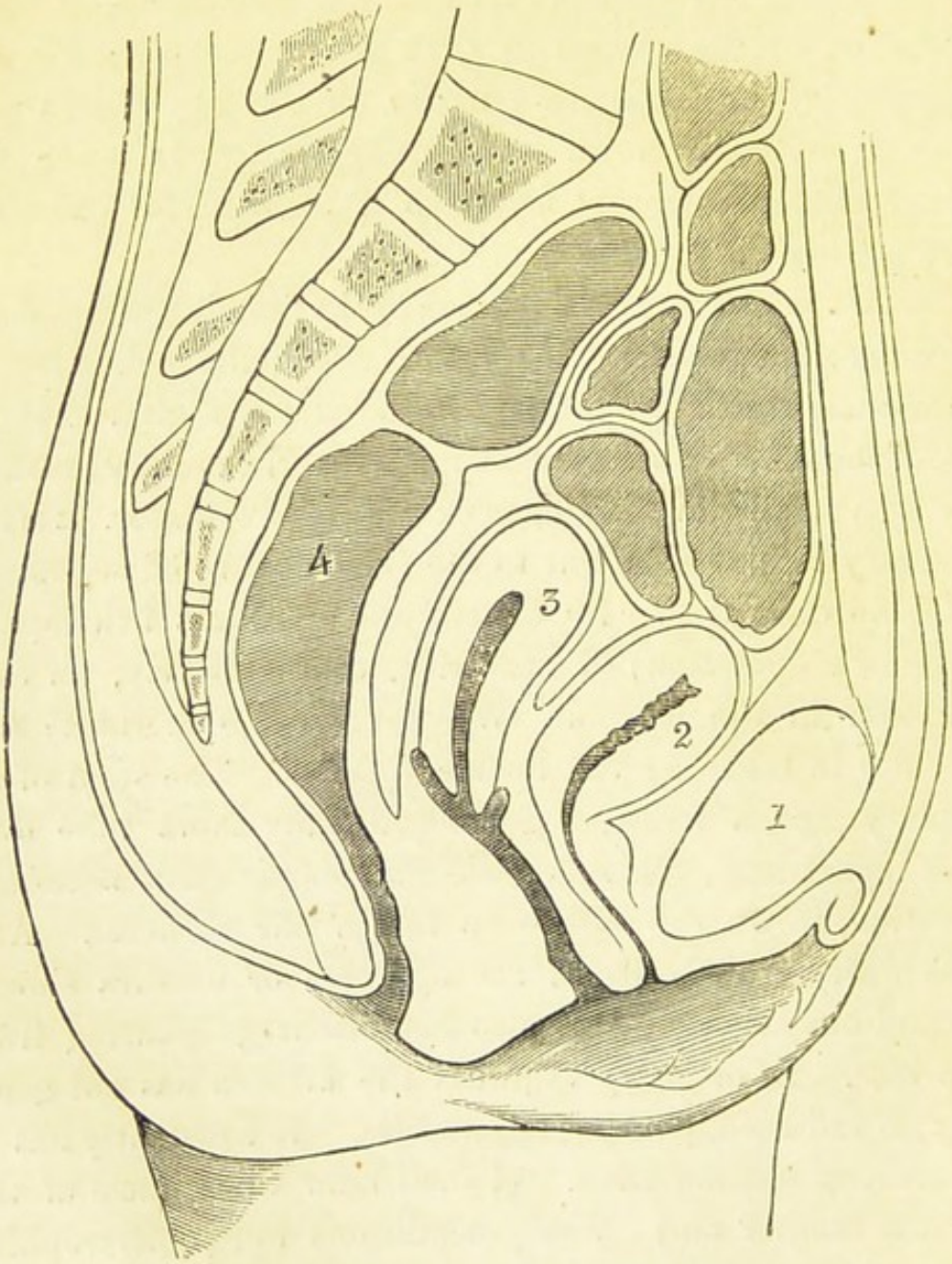


FIG. 2.—Section of the body of a woman, aged twenty-five, showing the Pelvic Viscera and Perinæum. (Adapted from 'Atlas of Descriptive Anatomy.') (After Heitzman.)

of its walls are shown by the inherent power that the vagina possesses of expelling its contents; take for example the expulsion of the after-birth, the speculum, physometrous

collections. It is not a fixed canal, but freely movable, and is materially influenced by the acts of respiration, depressed during inspiration, rising again during expiration. The position of the bladder, the distension of the rectum, the state of the superincumbent viscera, pressure on the abdominal wall, all affect the vagina. The dense bed of cellular tissue which unites it to the base of the bladder, and still lower down, and more intimately, to the urethra, affords a clue to the association of movement between the bladder, uterus, and

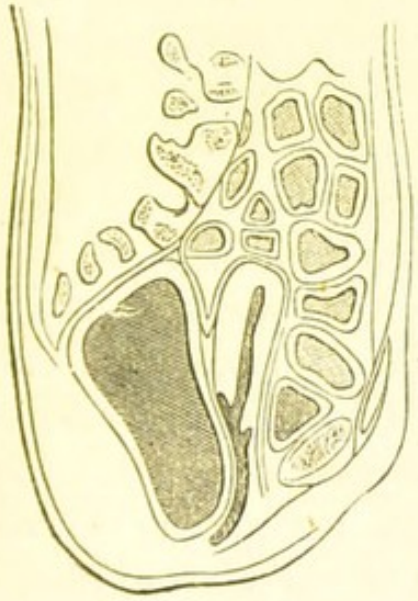


FIG. 3.—From Braune, showing Distended Rectum, and Empty Bladder (Piragoff's Section).

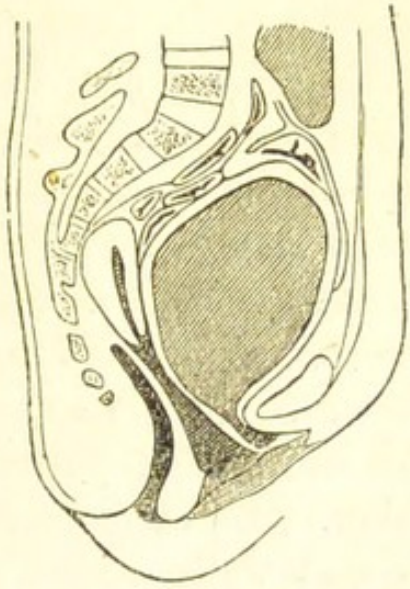


FIG. 4.—From Braune, showing Distended Bladder (Piragoff's Section).

vagina. Its connection posteriorly to the rectum, through the peritoneum above and loose cellular tissue inferiorly, explains a similar association of movement with the rectum, though in a less degree.* We have thus a movable muscular tube, influenced on all sides by the surrounding viscera and its walls endowed with considerable elasticity. It has intimately connected with it an organ whose weight and position vary from time to time, subjected to much the same influences from its surroundings as the vagina itself, and by which canal it is in great measure supported. The

* See fig. 8.

only sound gynecological view to take of the vagina is to regard it as the important bond of union between the uterus, rectum, and bladder, while forming with the perinæal body the support inferiorly of the uterus. Its muscular walls further endow it with this supporting power. But the terms 'canal' and 'tube' are apt to give the student an erroneous impression. They give the idea of a cavity. True, in old multipara, in cases of procidentia, when we have uterine displacements, or at times when we have abnormal states of the bladder or rectum, and of the reflections of peritoneum connecting the uterus with these viscera, the vaginal walls at the fundus may be separated. But we have only to watch the passage closing after an ordinary examination, or feel for ourselves—in the introduction of the finger—the close apposition of the vaginal walls, to be convinced that the normal condition of the vagina is one of complete closure. Two most important purposes are thus effected. Greater support is obtained for the uterus above; the entrance of putrefactive elements is prevented from below. In atonic states, when the muscularity of the vaginal walls is lost, we lose much of this advantage, the uterus sinks, and if, as unfortunately is often the case, the perineal body has also suffered, and is deficient in tone and vitality, or still worse, has been injured by previous deliveries, the displaced uterus becomes still more displaced, dragging with it the anterior vaginal wall, which in its turn descends, and we have the first stage of the subsequent procidentia or prolapse. I cannot but help thinking that with the modern rage for so-called 'supports,' and our muddled mechanical ideas of pessaries, the varieties of which are so infinite, man's ingenuity is taxed to the uttermost to destroy that very uterine support which nature has devised. I speak of their misuse, not of their scientific and legitimate application. Perhaps no gynecological appliance

is more commonly abused than a pessary. To fix a rigid and *immovable* bar or ring in the normal vaginal passage, is essentially barbarous and unscientific. Yet this is what is done in thousands of cases every day by men ignorant of the first principle of a uterine lever support, until we have occasionally to cut it out of the vaginal wall in which it has formed for itself a bed.

The vast extent of the mucous membrane lining the vaginal passage explains the difficulty we experience in curing vaginitis and the severity of gonorrhœal inflammation in the female; its folds and rugæ affording hiding-places for secretion and impure discharges, while its numerous vascular papillæ, with their investing epithelium removed, at first congested and prominent, finally become hypertrophied and granular.

THE HYMEN.—I have seen one remarkable case where the hymen was rigid and unruptured, only a small aperture existing, and still the patient became pregnant. This only establishes the fact that penetration is not necessary for the act of conception to take place. Often this thickened hymen gives rise to trouble after marriage. The passage of an expanding trivalve conical speculum with diverging blades, if necessary under chloroform, and the gradual separation of the blades by the screw will at one sitting generally rectify this defect. For the far more serious vice of conformation, imperforate hymen, which has, as its consequence, retention of the menses, the best treatment, in my experience, is a crucial incision, made under carbolic spray; and after evacuation of the thick, black, tarry fluid which is generally secreted in this condition, to wash out the vaginal cavity repeatedly with warm Condy's fluid or carbolic lotion, applying a T-bandage to the vulva, and passing twice daily a small plug of salicylic acid wool soaked in glycerine into the vagina.

When a young girl after the age of puberty, who has never menstruated, is brought to us complaining of ill-defined abdominal pains, and, it may be, some attendant constitutional symptoms, we should always satisfy ourselves that there is no atresia of the vaginal passage or any occlusion of the vulva. Now and then we meet a case in which rigors have occurred, and high temperature, rapid pulse, severe abdominal pain, local tenderness, with distension, and the physical signs of a tumour, are present. Here, with an imperforate hymen we may suspect peritonitis, retro-hæmatocele, and all the greater danger of septicæmia. One rule we should always adhere to in operations for imperforate hymen, is, to operate at the patient's home, have her in bed, and use the strictest antiseptic precautions.

PERINÆUM.*—Sufficient has already been said of this body as a support, to indicate the necessity of attending to any old lacerations or rents. Also we learn this important lesson, to always inspect the perinæum after labour, especially after first labour. Many a small rent, the source of future uterine trouble, escapes notice even after ordinary labour. Let us always regard Goodell's two invaluable hints—'*relaxation* of the perinæum' and 'immediate suture.' The harmful old practice of 'supporting' it, and the negligence of postponing the closure of the rent, have cost many a woman an infinity of misery, and, through a septicæmia, induced by perinæal wounds made in operating and during the puerperal period, occasionally peritonitis and death.

To 'relax the perinæum' we pass the forefinger and middle of the left hand into the rectum, and hook forward the sphincter, while the thumb of the same hand retards and modifies the pressure of the advancing head.†

The influence of decubitis on the vagina is of importance. In the dorsal position the vagina remains closed; hence

* See chapter on 'Lacerated Perinæum.'

† See Goodell, 'Lessons in Gynecology,' p. 94.

after operation we prefer to keep the woman thus: it helps to prevent the entrance of air. In washing out the vagina with the patient in bed, I prefer the lateral or semi-prone position: the fluid returns better. In examination we elevate the hips by a couch slightly raised at the foot; this position tends, with the patient in the semi-prone position, to open the vagina, relieving it of the superincumbent weight of the abdominal viscera. But most effectively we take advantage of gravity in the knee, elbow, or semi-pectoral position: the woman converts her elbows, chest, and knees into a form of tripod (Fig. 5). The hips and buttocks are thus raised, the viscera are thrown downwards and forwards, the ovaries—as Goodell naïvely expresses it—'are put to bed.' It is this position we avail ourselves of in vaginal operations, especially vesical, rectal, and uterine fistulæ. In it the vaginal walls separate, and it most readily opens when the examining finger is inserted.

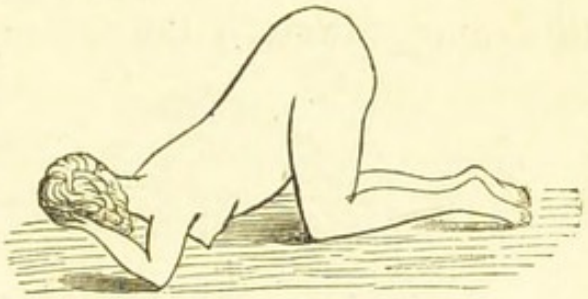


FIG. 5.—Genu-pectoral Position.

THE POUCH OF DOUGLAS.—This important space, formed by the utero-rectal folds of peritoneum, is the receptacle occasionally of an intestinal loop, a prolapsed ovary, cystic tumours, ovarian tumours, effusion of lymph, pus, and blood (hæmatocele); encroaching on it also we may find a retroverted uterus, and pressing upwards into it in extreme cases of anteversion the cervix uteri. Obstructing it posteriorly, we meet with, from the rectal side, fæcal accumulation and malignant growths of the rectum. In ordinary conditions the rectal and uterine walls of Douglas's space are in apposition; they are separated by tumours, effusion, and anteverted and anteflexed states of the uterus. To examine this space, which is always essential in any suspicious case

of uterine enlargement or rectal inconvenience, an enema should first be administered, and the rectum carefully, gently, but thoroughly explored with the finger. I have only to remark on the necessity for gentleness in all such manipulations. It is better first to partly introduce the fore-finger of the left hand, well anointed with vaseline, slowly stretch the external sphincter to either side, and then gradually insert the entire finger and explore the rectum; we may detect internal hæmorrhoids, or a stricture, or a collection of fluid in Douglas' pouch, or uterine retroversion or enlargement. In pelvic cellulitis, perimetric and parametric effusions, such an exploration is essential to endeavour to define posteriorly the nature (yielding or unyielding) of such effusions. Thus also we may often best ascertain the size, sensitiveness, or degree of congestion of the ovary. I need say nothing of the disgusting system of periodical dilatation of the rectum (even under chloroform) for an excessive reflex irritability of the sphincter, with dryness of the mucous membrane, brought on occasionally by erotic practices, and I fear also by too frequent medical manipulations.

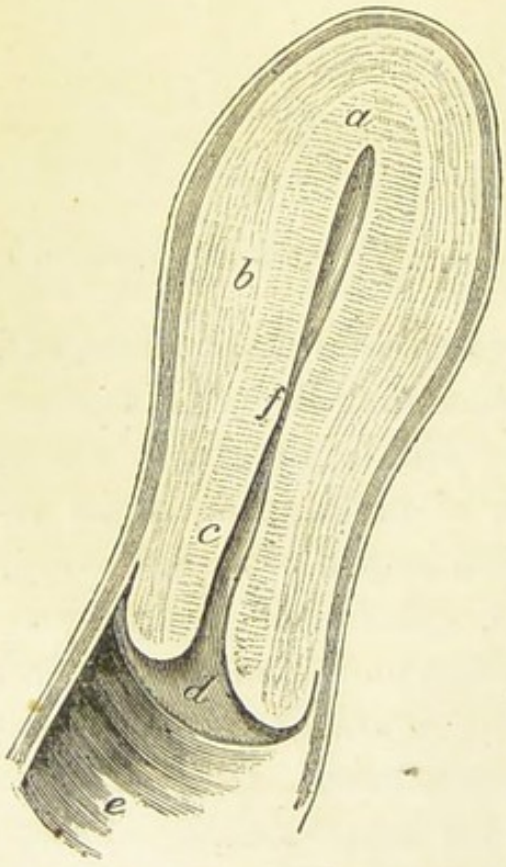


FIG. 6.—Vertical section of Uterus (Ramsbotham).

THE UTERUS.—It is right that we should always have before our mind what are the dimensions, size, and weight of the healthy uterus in the young virgin, and in the adult and multiparous woman. I take those of Richet and Sappey.

UTERUS.

Measurement in inches.

	Virgin.	Nulliparæ.	Multiparæ.
Entire Uterus, longitudinal	2·20	2·52	2·72
,, thickness .	0·85	0·90	1·00
,, transverse .	1·22	1·80	1·90
Cavity of uterus, transverse	0·60	1·08	1·24
,, length .	1·80	2·20	2·44
Isthmus uteri, length .	0·20-0·25		0·16
,, width .	0·16		
,, antero posterior	0·12		
	Grains.		Grains.
Weight	360 to 1000		1200 to 1800
Capacity		2·3 c.cm.	3·5 c.cm.

The uterus in the normal condition should not be felt above the pubes. It is first felt over the pubes at the third month of pregnancy, and two fingers' breadth above it at the fourth. In the natural state it lies anteverted in the

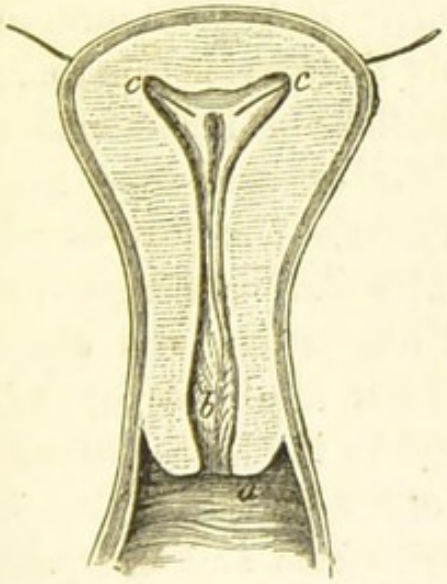


FIG. 7.—Lateral section of Uterus (Ramsbotham).

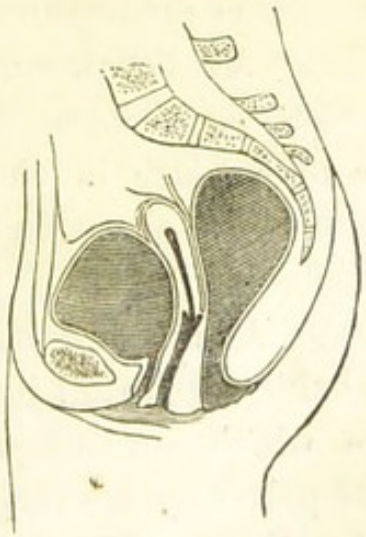


FIG. 8.—From Braune, showing Uterus pressed upon by Distended Bladder and Rectum (Legendre).

pelvis. It is included between two lines, one drawn from the sacro-vertebral angle to the lower border of the pubic bone, and the other carried from the inferior margin of the

fourth piece of the sacrum to the lower border of the symphysis. The axis of the uterus, roughly speaking, corresponds with that of the pelvic brim. It is well to remember how freely movable the healthy uterus is, *slung*, as we correctly say, in the pelvis, by its various ligaments. This mobility is influenced by the size of the uterus, by the condition of the surrounding cellular tissue, the state of the pelvic ligaments;—*fixation of the uterus* being one of the most important guides in the diagnosis and prognosis of various uterine affections. It is frequently fixed in fibroid enlargement, in malignant disease, and by effusions in parametritis and perimetritis. We are enabled, from the normal size and dimensions of the uterus, comparatively to estimate its increase in size in certain morbid states, notably in fibroid enlargement, and subinvolution. The dimensions of the isthmus explain to us the difficulty occasionally met in passing the uterine sound, and, still further, how essential free dilatation of the sphincter uteri is in any form of intra-uterine medication, how readily the narrow canal may be closed by reflex spasm, by irritation, or inflammation, and thus imprisonment of secretions or medicated solutions take place in the uterine cavity. But just as important is the situation of the isthmus uteri with regard to the reflected folds of peritoneum, utero-rectal and utero-vesical. Above and below the isthmus uteri the organ is free, being supported just at this part by the bed of cellular tissue which surrounds it. The organ is thus balanced in the pelvis by the reflection of peritoneum and encircling cellular tissue. These facts explain the proneness of the uterus to bend backwards and forwards just at this situation—a bending still further increased by the consequent constriction of the blood-vessels at the junction of the cervix with the body, and an increase of weight posteriorly or anteriorly from congestion of the tissues in the posterior

or anterior wall of the fundus above the seat of constriction. Constriction leads to congestion, congestion to hyperplastic effusion, and this to abnormal tissue-formation, which ultimately leads to contraction, and resulting flexion; flexion produces narrowing or twisting of the uterine canal at this spot, and stenosis, with all its consecutive ills.

This gives us an insight into the natural sequence of changes that tend to produce congestion of the fundus uteri, stenosis of the cervix, hyperplastic effusion, versions, flexions, fibroid development in the uterine walls, hardness of the cervix, amenorrhœa, dysmenorrhœa, and sterility. This freedom of movement teaches us also how important it is to look to the uterus in the female for the source of vesical irritation, retention, or incontinence of urine. I had a case in which for twelve years there was incontinence of urine, until, ultimately, the patient, a lady, was shut out from the enjoyment of society, and had always to wear a napkin or urinal; life was miserable, from the constant passing and dribbling of the urine. She had been placed under a variety of treatment. I straightened an ante-flexed uterus, inserted at first a galvanic stem pessary, and afterwards a Coghill's stem with a vaginal ring, attended carefully to the bowels, and restored the general health with tonics. For some years past this patient has been restored to perfect health and comfort; nor is there the least tendency to any unusual irritation of the bladder.

Uterine fibroids, collections of fluid or old effusions in Douglas's space, relaxation of the utero-sacral supports, will also throw the uterus forwards, and press it against the bladder. How obviously prudent, then, is the general rule in all cases of vesical trouble in women, where no ready explanation is otherwise afforded, to make an examination and ascertain the condition of the uterus. The ready manner in which slight swelling of the mucous lining of the narrow

canal of the isthmus uteri may cause its closure and imprison secretions, forces on us the importance of the golden rule, always to dilate the canal of the cervix before internal medication of the cavity of the fundus, and to maintain that dilatation when there is any suspicious flow, especially of a hæmorrhagic character, from the interior of the uterine cavity.

This same fact shows how futile are those abortive attempts to treat mechanical dysmenorrhœa associated with sterility, or ordinary congestive dysmenorrhœa consequent upon stenosis of the os uteri, by any of those playful slitting operations of the cervix that do not reach the real cause of the obstruction, disappointing alike the patient and practitioner. The stress laid on the essential axiom, to thoroughly divide the canal of the cervix uteri, in cases of stenosis, when operating for dysmenorrhœa and sterility, was one of the features in the impressive teaching of the late lamented Dr. Marion Sims, a passing tribute to whose memory and genius, having known him personally for some years, I may be permitted to make.

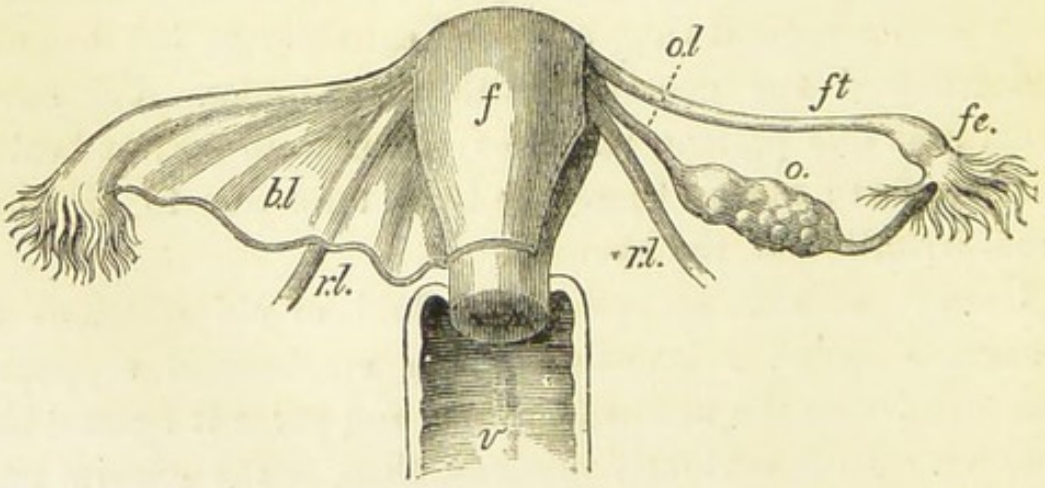


FIG. 9.—Uterus and Appendages.

THE UTERINE LIGAMENTS AND THE PELVIC FASCIA.—While the mechanical purposes secured by these ligaments are not forgotten in supporting the uterus and maintaining

it in position, more especially the utero-sacral, broad, and round ligaments, there are some other matters connected with their attachments and relations that must not be overlooked. The uterus is mainly prevented from falling downwards and forwards by the utero-sacral folds of peritoneum; in the dragging and stretching of these we have doubtless a ready explanation of the characteristic pain felt over the sacrum in certain cases of anteversion. The vascular and sensitive round ligaments, doubtless, contribute their share to the support of the uterus, and, perhaps, may serve other purposes (Rainey), through the muscular power with which they are endowed, in altering the direction of the uterus; when they are put on the stretch and dragged on, in displacements and in procidentia, we have a satisfactory clue to that characteristic pain running in the course of these ligaments, and so frequently accompanying ovarian pain in congested states both of uterus and ovaries. The association between over-distended conditions of the bladder, and uterine discomfort, we have an explanation of in the connection of the bladder and uterus through the utero-vesical ligaments, while the general distribution of the uterine and pelvic peritoneum, and the intimate association between it and the extensive fascia of the pelvis offer a ready explanation of the rapid transitional phases of uterine and pelvic inflammation—metritis passing into perimetritis and pelvic cellulitis, and the further complication of general peritonitis as a sequence to both. From the broad ligaments above to the sciatic notches below we have the complete continuity of the cellular tissue maintained. A match struck at one end of the train quickly lights the mischief, that, with lightning rapidity, often spreads, until the entire pelvic viscera are involved: they are thus pushed and pressed against each other by the effusion, the force of the conflagration being still further

heightened by the adjacent peritoneum taking on inflammation, and a localized or general peritonitis ensuing.

Infra-Vaginal Portion of Uterus and Os Uteri.—The infra-vaginal portion of the uterus, or that projecting into the vaginal passage, has, at the apex of the rounded cone, the opening leading to the canal of the uterus.* The length of the infra-vaginal portion varies, but its average length may be taken at from half to three-quarters of an inch. On the length and shape of this vaginal portion, and the character of the os uteri, we can form a fair opinion, in the first instance, of the condition of the uterus. Its shape and size may be altered; either it is considerably shortened, or, on the other hand, greatly elongated and hypertrophied; instead of the characteristic feel, yielding a little to the finger, it may be either very soft, or, on the contrary, hard and resisting. Take as an example of the former condition the uterus of pregnancy, and of the latter the hardened cervix in fibroid tumour, or the characteristic hardness of schirrus. It may be nipple-shaped, as in many cases of fibroid; and the infra-vaginal portion may appear to the examining finger to move over the body of the uterus, like the nipple of the breast or a hard mammary tumour. Or the conical form may be lost, and we search for the small 'pin-hole' orifice of the os uteri and detect it at times with difficulty. Or the short cervix runs sharply to a pointed cone, in the very apex of which is the orifice of the os externum. The os uteri likewise varies in shape, and size, and character, from the typical os uteri with its anterior and posterior lips running transversely, and giving to the finger (Cruveilhier) the sensation like the feel of the cartilage at the end of the

* The importance of the division of the cervix uteri into a supra-vaginal, infra-vaginal, and intermediate portion, is obvious when we consider the pathology of prolapse or hypertrophic elongation.

nose, to the mere slit, slight fissure, or small circular aperture, and even at times an absence of the orifice and atresia of the uterine canal. Here we have the source of much of the misery that is associated with dysmenorrhœa,—ovarian pain, congestion, and sterility, the consequences of mechanical obstruction. In multipara we may find it large and dilatable, perhaps admitting the tip of the finger; or fissured and lacerated as the consequence of labour, and it may be, instrumental delivery. In pregnancy we have it partaking in the important general softening of the cervix, and hence it has more of a velvet-like feel, and is soft and patulous. At times we find it, as in endocervicitis, filled

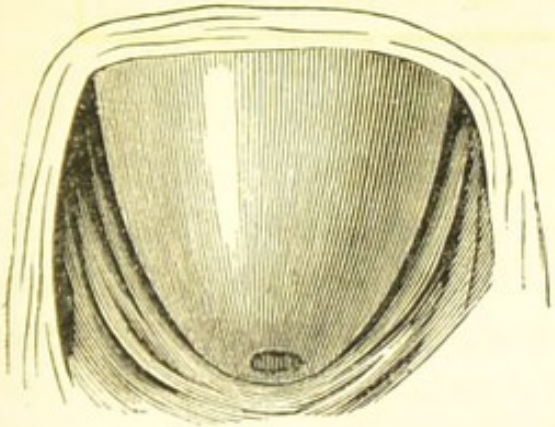


Fig. 10.—Conical Cervix.

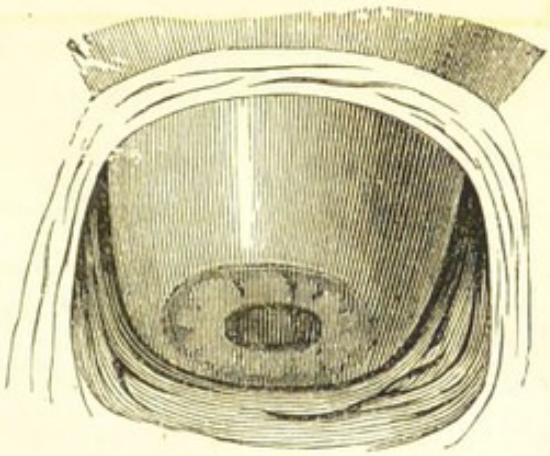


Fig. 11.—Os Uteri of Pregnancy (after Ramsbotham).

with a glairy and thick plug, which, in varying degrees of ropiness, hangs from it, and is so difficult to wipe away, and is a frequent cause of sterility. At other times we see the lips of the os uteri eroded, the epithelium partly denuded, and a vascular villous surface exposed, or a granular state of the os and the surrounding cervix. In such cases it bleeds readily and on the slightest touch, partaking of that congested state of the entire cervix which is present with varying degrees of cervical endometritis.

Uterine and Vaginal Secretions.—Some general considerations there are which bear on our knowledge of

uterine and vaginal normal secretions and discharges. It is well to remember the close and intimate connection and permeability of the uterine tissues, as well as their porous nature. This is of importance, and explains those metritic troubles which arise after intra-uterine medication, independently of the passage of any fluid into the Fallopian tube. The size of the uterine veins explains the frequent occurrence of thrombosis and septicæmia; the large number of lymphatics distributed throughout its tissues, and their free communication with the lumbar and pelvic ganglia, render this organ peculiarly prone to septic absorption. The mucous plug that fills the cervix uteri helps to ward off

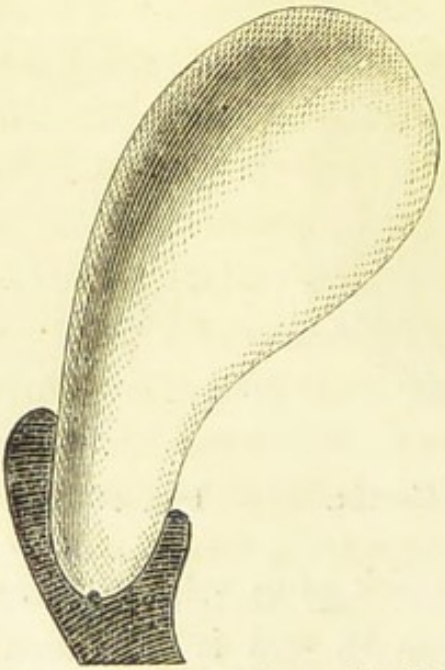


Fig. 12.—Congenital Stenosis (Schroeder).

septic change by preventing the admission of air into the uterine cavity. In its exaggerated and altered state this secretion forms a most tenacious discharge, glairy, and like unboiled white of egg, difficult to remove or arrest. It comes from the cervical glands, is alkaline, is washed away by the menstrual flow, and when normal in character does not interfere with the passage of the spermatozoa. The epithelium found in the discharge is dentated. The

mucous membrane of the cavity of the uterus and of the Fallopian tubes secretes, on the contrary, a whitish alkaline mucus, not so tenacious, with columnar ciliated epithelium contained in it.

At times this secretion is profuse, and on examination with the speculum, we see it poured out in quantity from the uterus. Very different is the secretion commonly found at the fundus of the vagina and the neighbouring cervix uteri. It comes from the outer surface of the cervix and adjoining vaginal wall. The epithelium is squamous; the reaction is acid. The remainder of the vaginal mucous membrane secretes an acid (squamous) mucus, and the sebaceous glands of the vulva pour out an oily secretion. (I shall say more of these discharges further on.)

THE FALLOPIAN TUBES.—Situated in the broad ligaments, and floating free in the pelvis, the Fallopian tubes are liable to twists and bends, and to contract adhesions to adjacent parts, while their connection with the ovaries and uterus renders them liable to every influence which any change in position of these latter organs exerts. Owing to the small calibre of the uterine portion of the tube (0·12 of an inch in diameter), and the fact that its orifice is filled with mucus, it follows that fluids are, as a rule, prevented from passing from the uterine cavities into the Fallopian tube. But if this plug be disturbed, or the tube be more patent than usual, fluids may then readily find their way into the peritoneal cavity. Dr. Tyler Smith, recognising the patent condition of the uterine orifice, suggested catheterization of the tubes in cases of obstruction, tubal gestation, etc. Dr. Matthews Duncan has drawn attention to this abnormal patency, and has pointed out that it affords an explanation of the passage of the sound out of the uterus in certain cases. This I satisfied myself of in a woman I was sent to operate on for ovarian tumour. The

sound passed on several occasions readily its entire length, though the uterus was not enlarged, as proved after paracentesis. The only explanation I could offer was the passage of the instrument into the peritoneal cavity through the patent orifice. Repeated attacks of ovaritis, recurrent pelvic peritonitis, adhesions following pelvic cellulitis, all influence the position of the tubes and their power of grasping the ovary. Hence we so frequently find thickened states of the broad ligaments, adherent ovaries, contractions and adhesions in the vaginal roof, in cases of sterility. Thus the menstrual secretion may be retained in the Fallopian tube. This retention, and various other causes, may lead to its dilatation, while fluid accumulation and cysts are occasionally the cause of its distension. The occurrence of salpingitis, as a consequence of inflammation of the cavity of the uterus, and especially following gonorrhœal infection, is readily understood.

THE OVARY.—The ovary at either side of the pelvis is in its normal state about the size of a large almond, weighing from 80 to 90 grains. Its exact position is determined by the surrounding viscera, though the gland as a rule lies posteriorly and laterally in the pelvis, the left being in close proximity to the rectum, and about one inch from the uterus. According to Henle there are some 72,000 Graafian follicles in the two ovaries; the escape of the ovules and the ovum gives us the false and the true corpora lutea. The process of ovulation (not necessary here to enter on a description of) occurring once every twenty-eight days, is accompanied by the rupture of one of these follicles. These periodical ovarian enlargements are attended by increased flow of blood to the ovary, temporary congestion, and an increase in its weight. Should the Fallopian tube not grasp the ovary when this follicle has ripened and burst, the ovule may fall into the peritoneal cavity, or blood may

escape into it. The ovary and the uterus have such intimate connections, both in their peritoneal coverings and in the arterial and venous supplies of both organs (the utero-ovarian arteries and veins), that any congested condition of the one must react on the other. This is best seen in the contemporaneous and relative increase in size of the ovarian arteries and veins during gestation. Taking this vascular association of the ovary and uterus into consideration, with the equally close lymphatic distribution of both ovarian and uterine lymphatics in the lumbar glands, we have no difficulty in understanding how uterine purulent and septicæmic states influence the ovaries, or the manner in which such serious conditions as pelvic peritonitis, parametritis, gonorrhœal inflammation, are generally attended by a greater or less degree of ovaritis. In the large vascular supply of the ovaries, and the periodical alteration in the quantity of blood circulating through the ovarian stroma—a blood-supply which is frequently depraved—we have explained the many morbid changes occurring in the ovarian tissues, and associated constantly with vicious menstruation. On the one hand, we find congestive states leading to hypertrophy, ovarian apoplexy, rupture of vessels, the formation of cysts, fibromata; or, on the other, anæmic conditions tending to atrophy, and, in milder degrees, irregular, arrested, or suppressed menstruation. Our knowledge of the physiological function discharged by the ovaries, and the intimate dependence of the woman's physical and mental health on the nature of that act, forces us to regard, as of primary importance to a woman's physical wellbeing, the health of her ovaries, and the correct discharge of the function of ovulation. No greater advance in gynecological science has been made of late years than in the operation of removal of the ovaries, associated with the name of Dr. Battey of Georgia,

for inducing the premature change of life in woman, in various morbid states of both uterus and ovaries.

THE RECTUM.*—In practice, the close sympathy that exists between the uterus and the rectum is often overlooked. The habitual neglect of the lower bowel, which is frequently met with in women, is the cause not only of constitutional but also of many local disorders. Various dyspeptic troubles —headache, flatulent pains, functional heart palpitations, hæmorrhoids, follow from the congested portal system. Rectal irritation, associated with a congested and dry condition of the mucous membrane, is constantly found a companion of different vaginal and uterine disorders. One organ reacts on the other, and the recognised difficulty in curing any rectal affection while a uterine diseased state continues, renders it imperative to relieve the former before we can hope permanently to benefit the latter. This is especially true of fissure, strictured states, fistula, ulcers, pruritus. But perhaps the complication most commonly met with is hæmorrhoids, both external and internal. These are more distressing when there exists at the same time any version or flexion of the uterus, more particularly retroversion—the uterine pressure aggravating the rectal pain and discomfort. The rectum is also encroached on, and the act of defæcation interfered with, in pelvic peritonitis with effusion, pelvic cellulitis, uterine fibroids, various accumulations in Douglas's pouch. In making our first thorough examination of a gynecological case, having by an enema emptied the rectum, we gain our most important information by a careful rectal exploration.

* See Chapter on the Rectum.

CHAPTER II.

THE EXAMINATION OF A CASE.

As in other organs, that physician is most likely to arrive at a sound basis for his treatment who makes his first examination a systematic and careful one. Many an error in diagnosis might be saved if we adhered to this rule. One word of caution is necessary. While unnecessary examinations of the uterus are, above all things, to be deprecated, on the other hand, nothing can be more dangerous to a medical man's reputation than the neglect of making a careful vaginal examination, when he is in doubt as regards the nature of a difficult case, and one clearly pointing to some affection of the pelvic viscera. Want of caution in this respect has brought many a young medical man into disgrace. Take, for example, hæmorrhage, the result of undetected uterine polypus, or overlooked malignant disease of the uterus; a vaginal discharge attendant upon pelvic cellulitis; irritability of the bladder, due to a flexion or version of the womb, or to a pelvic hæmatocele, or a uterine fibroid; some difficulty in defæcation, attendant on a tumour, pelvic cellulitis, or uterine displacement; frequency in making water, due to undetected stone in the bladder; a prolonged back-pain, the result of retroversion of the uterus. These are just a few instances of the many cases in which the want of a careful vaginal examination, in the first instance, is certain to reflect discredit, through some undiscovered morbid or abnormal condition of bowel, uterus, or bladder.

The appliances necessary to make an immediate gynecological examination, in the great majority of instances, are:

Suitable bed or couch.
Tape-measure.
Stethoscope.
Specula (vaginal).
Speculum forceps.
Cotton wool (absorbent).
Uterine sound.
Oliver's test-papers.
Clinical thermometer.

And for further examination:

Chloroform and inhaler.
Aspirating needle or subcutaneous injection syringe.
Tupelo tents or sponge.
Uterine dilators.
Uterine holder or tenaculum.
Tent-introducer.
Uterine probe and sound.
Microscope.

I now assume a patient consults us for any uterine or ovarian disease, and one requiring a careful examination, and in which an exhaustive differential diagnosis must be made. We first take the history of the case somewhat in this form:

Age; occupation; married or single; number of pregnancies; number of abortions; date of last pregnancy; if nursing; age at which menstruation began; its character recently, in quantity, quality, regularity, and if associated with pain; if there is pain, its nature and seat; discharges, inflammatory, leucorrhœal, sanguineous; hereditary ten-

dencies in the family history; state of the bowel; sleep; appetite; exercise (power of walking). It may be well to make a few brief observations on each of the facts thus elicited at our first interview.

History of the Case.

Age.—The age of the patient has an important bearing on the diagnosis and management. Take for example the time of puberty, with its physiological influences, the commencement of the function of ovulation, all the sympathies which are awakened at this period, the sudden bursting into womanhood, the rapid development of the tissues, and the constant demand for renewal on the blood; or that equally critical period of life, the menopause, when the active discharge of the function of ovulation is ceasing, and the child-bearing epoch is about to end; when, with a second complete alteration in the system, we have local determination of blood at irregular intervals to the various organs, more especially the ovaries and uterus, sometimes culminating in local apoplexies, congestion of the ovaries, menorrhagia, the growth of uterine fibroids or polypus, the commencement of malignant disease.

At this period, also, we are likely to meet with vicarious hæmorrhage from distant organs, epistaxis, hæmatemesis, hæmoptosis. The woman may be troubled with various head-troubles, flushings, pain, megrim, and other important disturbances of the nervous system, as convulsions, or paralysis. Then there is the intervening period of active ovulation, during which—the child-bearing period—the woman is liable to any of the accidents or results that follow from deviations from the normal physiological act. It is then that we have to deal with amenorrhœa, dysmenorrhœa, menorrhagia, leucorrhœal discharges; ovarian troubles, as oophoria,

ovaritis; ovarian morbid growths, ovarian solid and cystic tumours; uterine congestions, inflammations, growths, alterations in position, flexions and versions, and all the results of these abnormal conditions. Then, more especially if the woman be married, we meet with those affections which are often directly or indirectly connected with the married state: vulvar and vaginal inflammation, uterine discharges, specific sores and gonorrhœa, perinæal laceration, hæmorrhoids, vesical and urethral complications. Both in the single and married woman, malignant or non-malignant tumours are apt to occur, and in the married the various disorders consequent on lactation.

Pregnancies and Abortions.—The number of pregnancies, with their successive effects on the constitution of the woman, and the uterus, is a point of considerable moment. The origin of lacerations of the cervix, subinvolution, fistulæ, vesical troubles, mammary growths, should be traced. The relation of fibroids to the pregnant condition may be ascertained. Repeated abortions and miscarriages lead us to suspect either a habit, or the presence of syphilitic taint, as a cause; or they explain some accompanying constitutional fault, and may arouse our suspicion of a latent renal mischief, and we detect albuminuria or the urine of granular kidney. These inquiries are assisted by putting cautious questions concerning the living and dead children; the dates of the abortions, and the various periods of pregnancy at which they took place.

Occupation and Habits.—This is the most important consideration after our patient's age; whether she leads an active or sedentary life; if she has to stand much, or do a great deal of stooping work; if she sits up late at night, dissipates, spends a considerable time at the piano or painting, or the sewing-machine; in short, how she generally occupies and amuses herself. This naturally touches on her

daily habits—exercise, clothing, diet, and bathing. We may question her or her friends as to the outdoor exercise taken daily; elicit information on such important matters as tight-lacing, tight garters, the manner of suspending the under-clothing, the wearing of flannel, if the temperature of the extremities is attended to. We learn the nature of her food,—if healthful, simple and nutritious, or trashy and indigestible; the times of meals, and the interval between; the amount of alcohol and the quantity of tea consumed. The character of the patient's appetite, the hours of rest, and the amount of sleep are thus arrived at. Not the least important matter to elicit, is, the care bestowed on the skin. The daily bath, suited in its degree of temperature to the temperament of the individual, is perhaps the most healthful custom a woman can adopt. Every woman should have in her bed-room a sponge-bath. If she cannot take the cold bath she can have the water regulated, according to the time of year, from 60° upwards, and proper sponging of the body, followed by friction with a rough towel. Sea-bathing, again, is most bracing and suitable for many constitutions, quite as unfit and hurtful to others. It is well to find out, exactly, how the sea air and sea-bathing affect individuals before we either permit or recommend it.

Menstruation.—With young girls we frequently find a difficulty in coming to any definite conclusions regarding the regularity, the quantity, and the quality of the menstrual flow—all of them equally important facts. At times we are wilfully deceived, and this must always be remembered in cases in which the least suspicion of pregnancy exists. Here we must place little reliance on assertions, and ascertain, if possible, through a mother or relative, if the patient does become unwell. Mothers are at times careless in watching the occurrence of menstruation;

this important duty is left to governesses, schoolmistresses, and servants. Hence, not seldom does it happen that a girl is brought for advice for some anæmic or chlorotic state, and the irregularity of menstruation associated with it has passed unnoticed and unchecked. It is necessary, in such instances, that we should insist on a careful watch being kept on the periods and the character of the discharge. If there be suffering with the period, we learn the time when the pain is most severe; if it precedes the flow, and disappears or continues during its occurrence; if there are nervous disturbances, headaches, symptoms of cerebral congestion or hysterical tendencies. Tinnitus aurium or visual aberrations may guide us to an ophthalmoscopic examination, and the discovery of arterial tension, optic neuritis, and general hyperæmia of the retina. These in their turn will suggest a urinary examination, and possibly the detection of some latent renal disorder. It will be important to date accurately the commencement of any irregularities, whether in diminution or excess; also, if there be menorrhagia, to know whether any slight discharge continues in the intervals between the periods, and its quantity. If the patient has been regular and has ceased to be so, we look for some cause for the first irregularities, as indiscretion in exercise, in dress, in bathing, perhaps mental shock or emotion, or climate, or period of life.

Discharges.—I shall have occasion more fully to refer to the diagnostic importance of uterine and vaginal discharge in another chapter. I may here briefly refer to the character of the discharge which influences the judgment of a practical physician in forming his opinion on any case during examination. A discharge may be in character mucoid, purulent, muco-purulent, sebaceous, sanguineous; it is described as creamy, flaky, thick and viscid, gelatinous, transparent, and acid; in colour, greyish, white, yellow, or

brown; at times it is tinged with blood, or it may be of an olive-colour; it may have a heavy odour or be extremely fœtid, or, on the other hand, odourless. All these qualities, as we shall see, indicate, more or less, the source and nature of the discharge. Our opinion is fortified or verified by a microscopic examination, when the presence of pus and the kind of epithelium, whether squamous or columnar, can be determined.

APPLIANCES NECESSARY FOR DIAGNOSIS.—It is necessary to refer to the objects gained by the use of the appliances already alluded to as required in a careful diagnosis.

Bed or Couch.—In order to make a correct diagnosis we have to proceed as follows: The patient is either in bed or on a couch. For all gynecological examinations I prefer a couch. That of Goodell (figured in his 'Lessons in Gynecology') I have found to answer admirably in hospital practice. It has, as all good examining couches should have, a dip of three inches at the head, so as to raise the hips; and by means of a lever handle the upholstered lid of the table can also be given a lateral dip so as to throw the abdomen forwards, a side-board supporting the body. Foot-rests are added for the feet, and one padded for the left ankle to rest on. When examining, in Sims's position, with this couch, I have many times with the duck-bill speculum and finger exposed the uterus for demonstration. For private practice a light couch can be constructed, with a drawer at the end for appliances and small shelf to draw out for resting instruments on. It should be conveniently high for the woman to get on to without any difficulty, and for the operator to sit at the side of to conduct any necessary manipulations. The couch should have an incline from the foot to the shoulders of about four to five inches, and the top can be sloped upwards to nearly the same level as the foot. It is a good plan to

have a small table made the same height as the couch opposite the operator's chair, and another chair at the left-hand side at its head, on which a friend can sit, facing towards the patient's feet. She can thus be cheered and encouraged, while her delicacy is not hurt. It is wonderful how a little gentleness and consideration, with a due regard to a woman's feelings, especially in unmarried girls, enable us to conduct an examination that any roughness or rudeness would make impossible. We can place a woman on her left side, on her back, or in the semi-prone position of Marion Sims. It is almost impossible to get the last-named posture properly in any ordinary bed. Yet it is undoubtedly the most advantageous in many instances, and indispensable in several manipulations of the uterus. For the great majority of first examinations, and where we do not require manipulative interference, it is sufficient to place the woman on her left side, with her thighs drawn up to the abdomen; and if in bed, the body placed diagonally, with the buttocks brought to the edge and the left arm carried behind the back, the face resting on the pillow. It is best to examine on a hard mattress, and, if necessary, a few pillows may be placed under the hips to raise them. The couch or table must be opposite a good light. After a first examination, and when further exploration of the uterus is necessitated, or the use of the speculum, the dorsal decubitus will be found the best for the operator and the most convenient for the patient. When we determine to adopt the semi-prone position, we do so thus: Any square table about four feet by two feet six inches, having a blanket smoothly spread on it, answers the purpose admirably. The patient lying down on this surface, on her left side, with the body placed diagonally, the buttocks well to the side, has the thighs drawn up; the left arm is next taken, and the back of the left hand is laid on her right scapula. The right hand

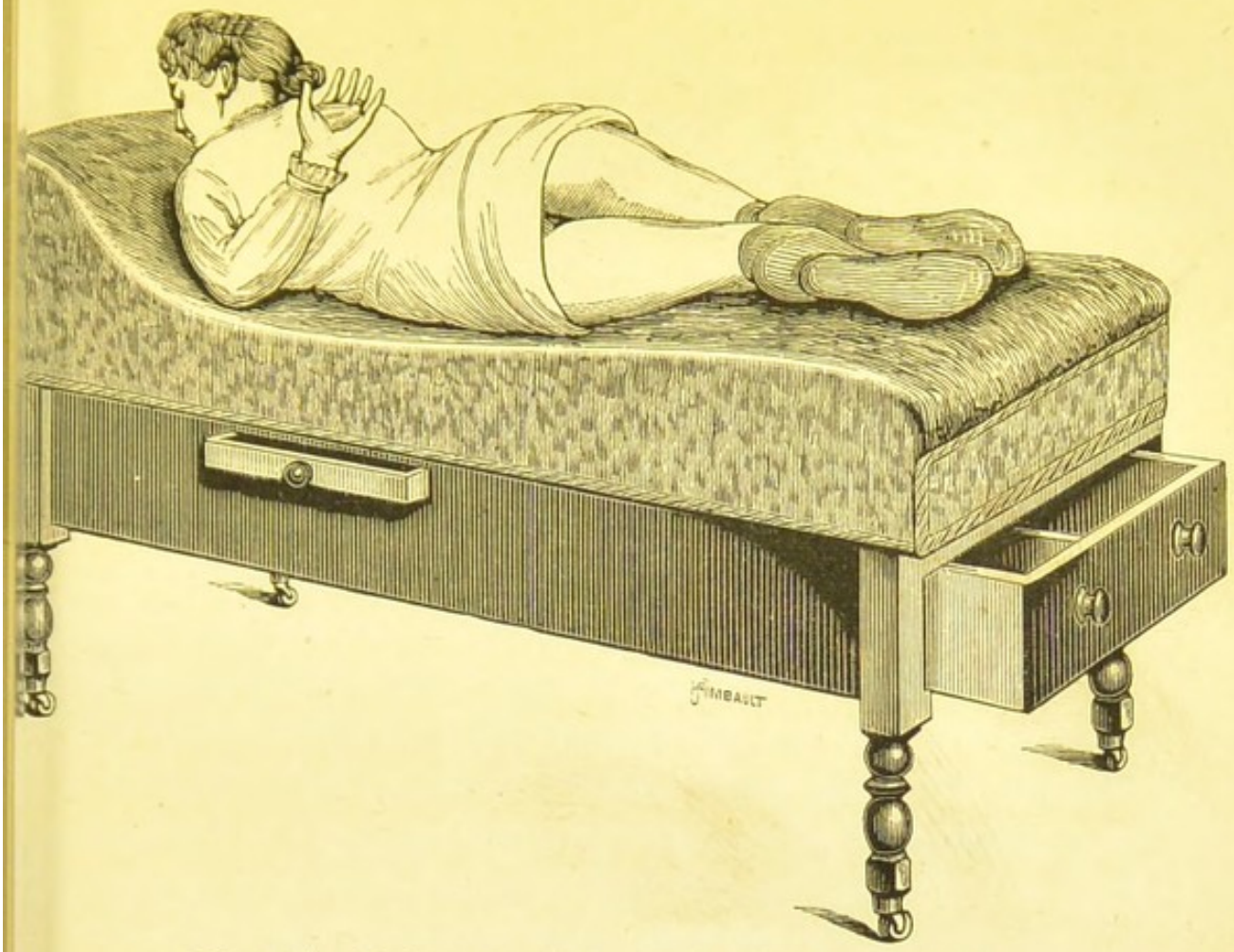


Fig. 12*.—Patient (semi-prone) placed for examination.

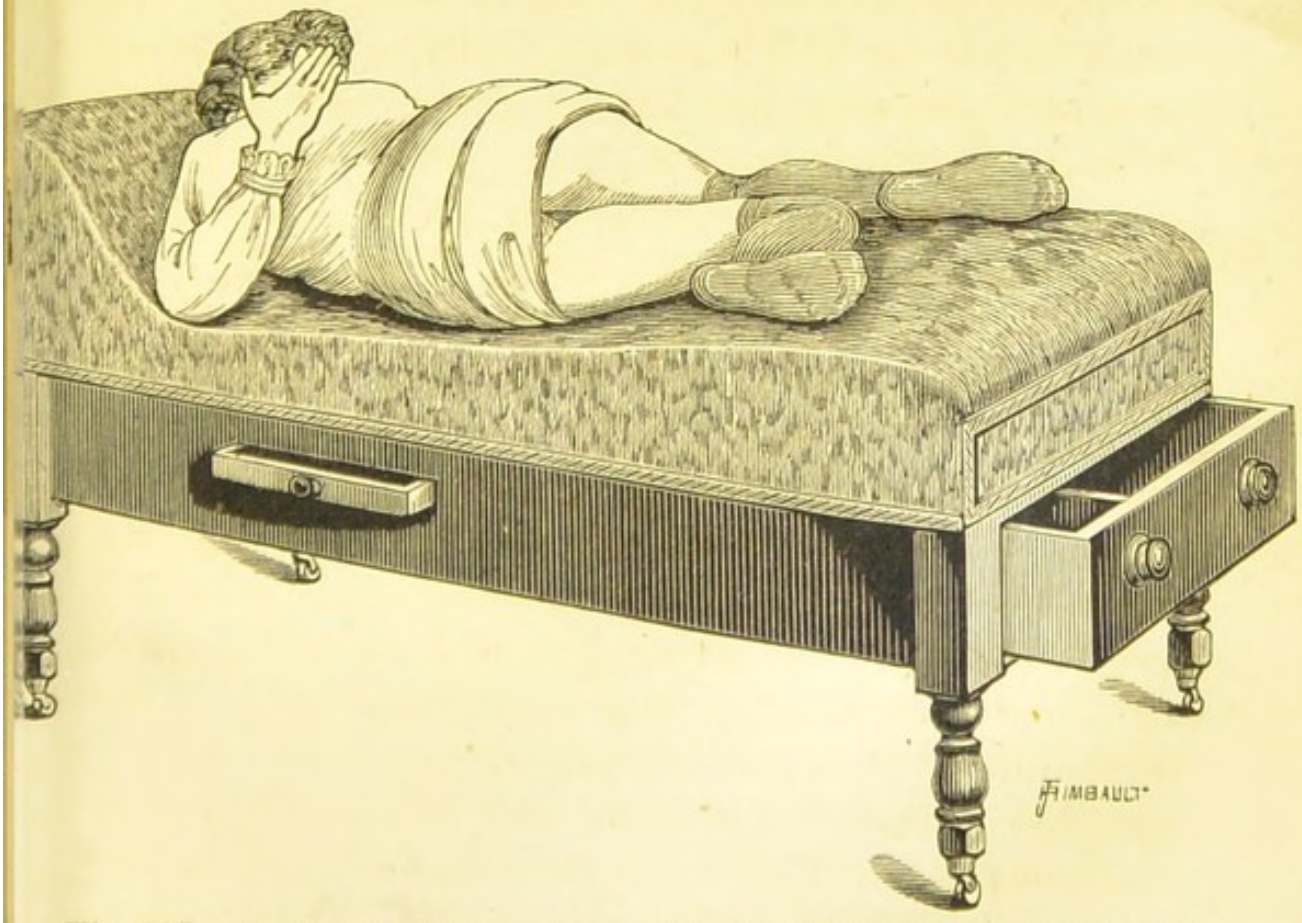


Fig. 13*.—Patient (semi-prone) placed for examination and manipulation.

To face p. 32.

is now let hang over the side of the couch, while the face is, when possible, partly turned towards the operator. Thus the sternum and chest are brought well on to the plane surface. At times we may not be able to accomplish this, but we thus secure the most favourable depression of the sternum. If, at the same time, the bed or couch is given a dip, as before described, we have the most perfect position in which to examine and conduct short manipulations by means of the duck-bill speculum. An assistant or nurse to hold the speculum steady and in position—a little art in itself—is required. I have only to remind young practitioners how careful they must be in taking every precaution to protect themselves from unjust aspersions, by having always at hand, and, when necessary, present in the study, some female attendant or friend of the patient.

The Tape-measure is useful for abdominal measurements. We require to take the circumference at the umbilicus, and the lateral measurements from the spinal column to the umbilicus, and from the umbilicus to the anterior superior iliac spine at either side; also from the anterior superior iliac spine to the symphysis. We thus estimate the amount of abdominal distension, and the size of a tumour, or the relative difference and degree of inequality between either side.

The Stethoscope is required for the differential diagnosis of pregnancy from ovarian dropsy, ascites, fibrocyst and fibroid tumours of the uterus, phantom pregnancy, and other causes of abdominal enlargement. The fœtal pulsation and placental souffle are most carefully to be listened for. It is also required for pulsating tumours of the abdomen, in the diagnosis of these from aneurismal enlargement of the vessels.

The Speculum is not necessary in a great many cases where our object is to diagnose the character of a tumour, or the nature of some pelvic swelling or uterine enlargement.

Rather in those cases in which, obviously, the affection is a uterine or vaginal inflammatory one, acute or chronic, is its use called for. In virgins its employment is to be avoided whenever possible. Never should it be taken in the hand for introduction, in such cases, unless its assistance is indispensable for diagnosis or treatment. It would be impossible to exaggerate the evils that have resulted from the fashionable abuse of this simple instrument.

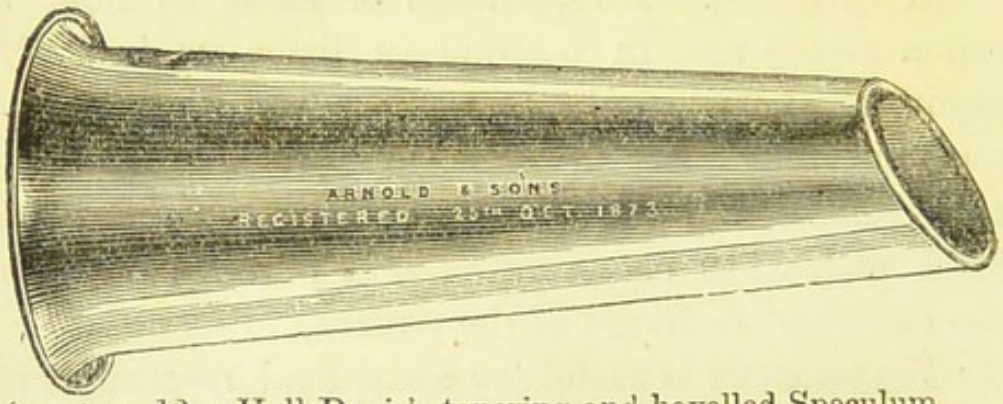


FIG. 13.—Hall Davis's tapering and bevelled Speculum.

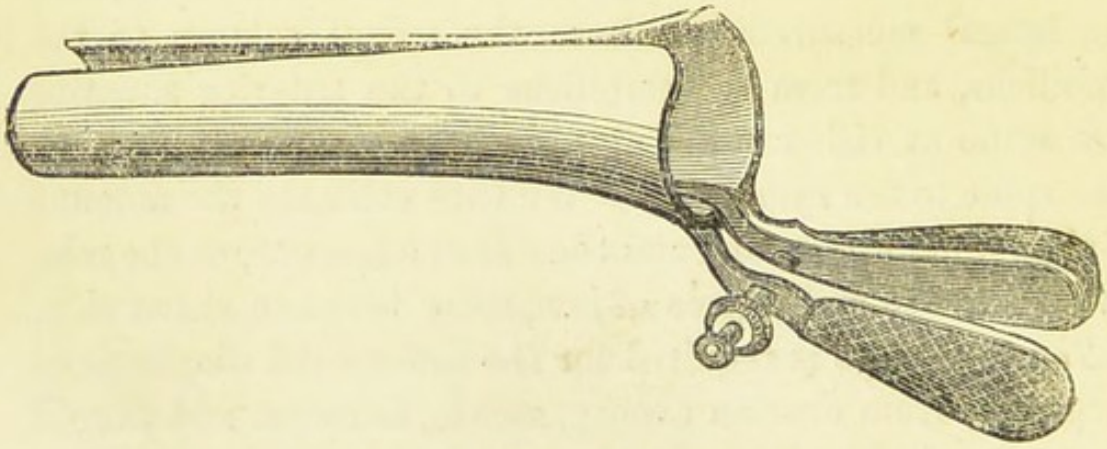


FIG. 14.—Ricord's Speculum.

The speculum must be gently introduced. The impression made on a patient by our first examination may secure her future confidence. Gentleness of manipulation must be cultivated, and especially in the introduction of the speculum. It is best to begin with a smaller-sized conical speculum, such as that of Dr. Hall Davis or Scanzoni. I prefer the speculum with the bevelled rim, as it does not hurt in the same way as those with the sharper edge. Specula

with obturators will be found convenient and easy of introduction. The short bivalve speculum of Barnes is an admirable instrument. It completely exposes the infra-vaginal cervix. Fergusson's glass speculum (Fig. 19) (of which we require to have three or four sizes) is generally made too long.* The uterine end should not be sloped at too

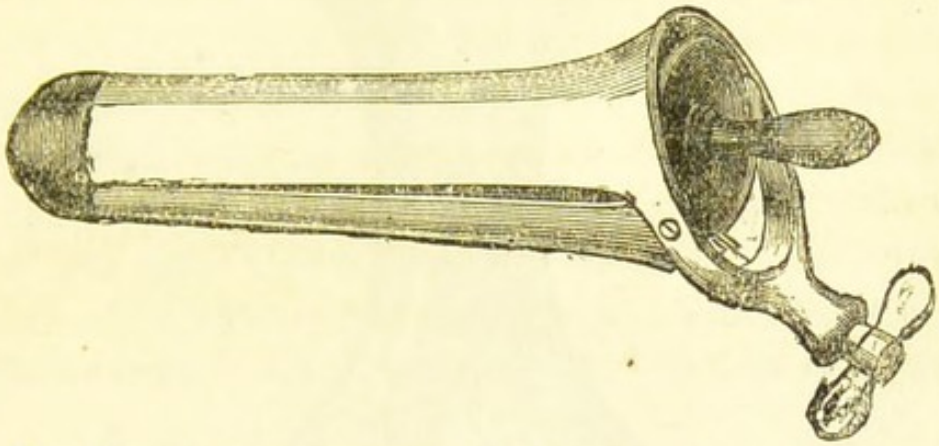


FIG. 15.—Bivalve Speculum of Dr. Robert Barnes.

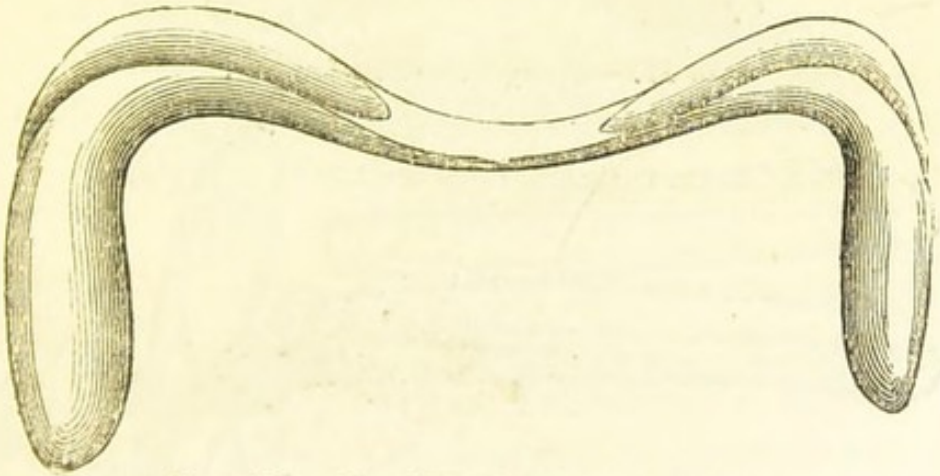


FIG. 16.—Sims' Duck-bill Speculum.*

great an angle. It throws a good light on the os uteri, and is useful for topical applications. It is now made of toughened glass. A fenestrated speculum (Fig. 18) is not as a rule of any special service. The duck-bill speculum (Fig. 16), or Neugebaur's (Fig. 17) variety of it, is for use in the semi-prone position. It is indispensable to the gynecologist in manipulations on the

* The blades of the speculum should not be too deeply grooved—nor too long—those ordinarily made frequently are. The white celluloid speculum of Messrs. Maw is an admirable kind.

os uteri and cervix. Specula must be kept scrupulously clean, not alone for the sake of better illumination, but also to avoid the risk of any contagion in the examination

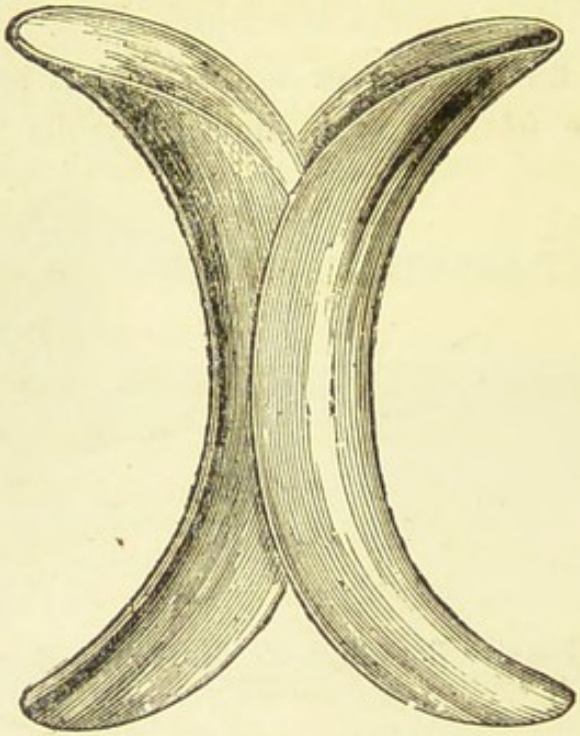


FIG. 17.—Neugebaur's Speculum.

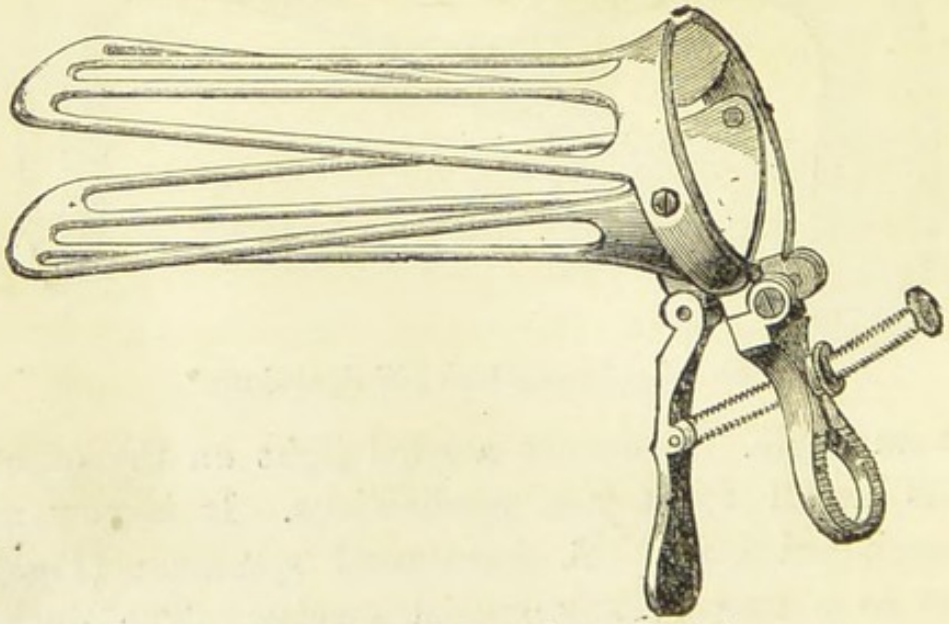


FIG. 18.—Fenestrated Speculum, Cusco's screw.

of several cases with the same instrument. If we use one with a bevelled rim, we should see that the groove is thoroughly cleansed. It is well to place all specula in a

little weak Condy's fluid after we have finished with them, and before they are finally washed with very hot water. To apply a tubular speculum: place the patient on her left side, or on her back, in the position before described. The speculum is first well anointed with oil, or some vaseline; it is taken in the right hand; if the lateral position is chosen, the right buttock is raised with the palm of the left hand, and the fingers of the same hand are used to separate the labia. The speculum with the long lip posteriorly is now pressed gently, but steadily, through the vulvar orifice (and here we may cheer the patient and encourage her to bear the slight pain of introduction). It is now pushed onwards, in a direction upwards and backwards, bearing well on the perinæum, until we



Fig. 19.—Fergusson's Speculum.

reach the posterior cul de sac of the vagina, and get the cervix well into the instrument. At times this is not easy; the uterus may be considerably anteverted or retroverted. A little practice and experience will enable us, with the uterine sound, to direct the os uteri forwards or backwards so as to bring it into sight. By rotating the speculum, withdrawing it a little and reintroducing it, we can generally obtain a complete view of the circumference of the cervix and the os uteri. If we place the woman on her back, we insert the speculum as in the lateral position, and press it well back on the perinæum in passing it into the vagina. In this method the os uteri generally comes into view readily, and the patient can herself often

give valuable assistance in supporting the speculum, if we happen not to have an assistant. The speculum forceps (Figs. 27, 28) is required with the speculum, and some pledgets of absorbent cotton-wool ready at hand, to wipe the surface of the os uteri, and to clear the vaginal roof of any discharge that may have accumulated or be pressed out by the speculum. It is well to have at hand a Playfair's uterine probe (Fig. 21), or a few of these, if we require to wipe out from the interior of the cervix any discharge with cotton wool; also an ordinary sponge-holder (Fig. 22). To



Fig. 20.—Playfair's Probe.



Fig. 21.—Playfair's Probe.



Fig. 22.—Sponge-holder.

use the duck-bill speculum, we place the woman in the semi-prone position of Marion Sims, as I have already described. An assistant, standing at the back of the patient, places the left hand flat on the right gluteal fold and holds it well up; the blade of the speculum is now introduced in rather an oblique manner to the orifice, the labia being gently separated; and while it is pushed upwards and backwards it is rotated on its axis, and the back of the speculum is brought against the perinæum. It is then carried into position, directed by the finger. Once the speculum is placed in the proper position, and the cervix uteri brought



FIG. 27.—Rectangular Speculum Forceps.

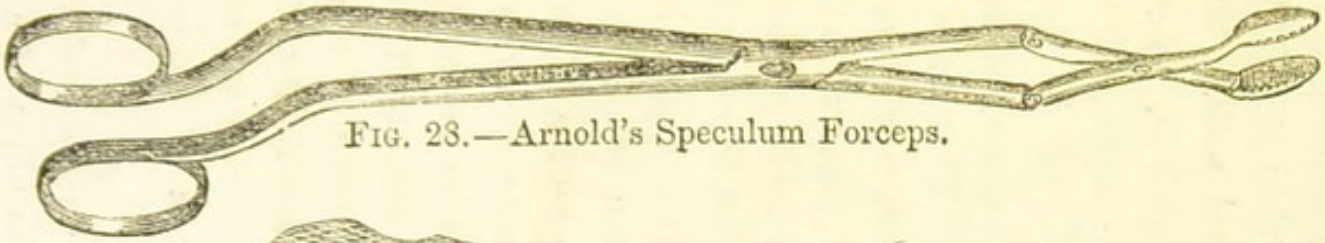


FIG. 28.—Arnold's Speculum Forceps.

FIG. 26.—Simpson's Sound.

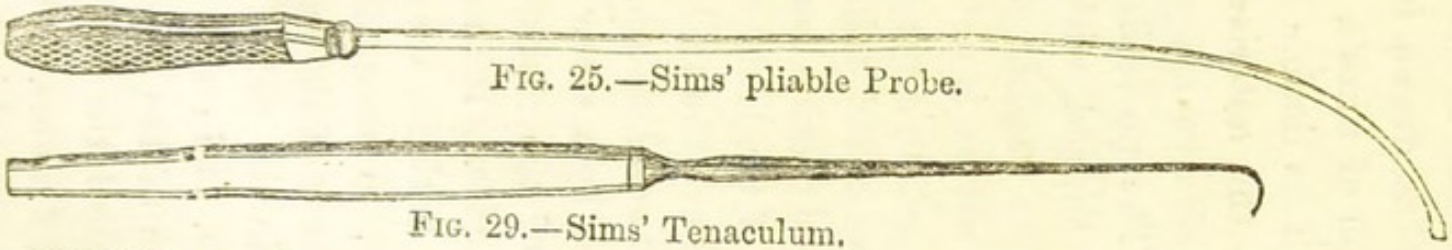


FIG. 25.—Sims' pliable Probe.

FIG. 29.—Sims' Tenaculum.

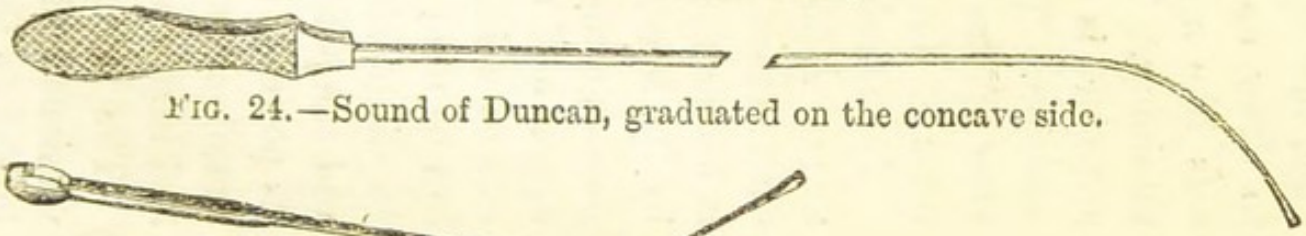


FIG. 24.—Sound of Duncan, graduated on the concave side.



FIG. 23.—Small portable Sound, about one-third size, with central screw.

well in front of the blade, the finger of the right hand, or the handle of the sound, must be carried up to the anterior vaginal wall, which is thus held out of the way. The uterus is generally, by this method, well exposed to view. If we require to bring the uterus down for medication, or to steady it for topical application, we use a Sims's uterine hook. It is fixed in the anterior lip of the uterus, and the os uteri is thus drawn into view. Neugebaur's speculum, a modification of Sims's, has, in some instances, the advantage, through its double blade, that it enables the operator to draw up the anterior vaginal wall. When applied, it acts like a bivalve speculum, and is, to an extent, self-retaining. The posterior blade having been applied, the anterior is slipped within it, and is thus guided into position. The vaginal roof is thus stretched, and a good view of the uterus is obtained. There are other modifications of Neugebaur's speculum not necessary to refer to.

The Uterine Sound takes the place of a long obstetrical finger. A good uterine sound should be pliable and smooth,—such as that of Dr. Kidd or Marion Sims, and if graduated it is better to have the scale on the concave side, as that used by Dr. Matthews Duncan. It can be made portable for the pocket, either by a screw in the centre of the sound, or the upper half of the instrument may screw into a case which acts as a handle. It should not be too heavy. The sound can be used both for diagnostic and therapeutical purposes. In diagnosis, to ascertain the length of the uterine cavity and the patency of the canal, the mobility of the uterus and its position in the pelvis ; in utero-rectal and recto-vesical examinations, as in the diagnosis of hæmatocele, polypus, and inversion of the uterus.

The principal therapeutical purpose of the sound is in versions and flexions, to take the place of a repositor. To introduce the sound into the uterus we proceed thus :

The patient is placed in the lateral or semi-prone position; the instrument is taken lightly by the handle in the left hand while the point of the forefinger of the right hand is carried up to the os uteri, which is felt, and its direction and the position of the uterus fairly ascertained. The sound is now introduced into the vagina, with the concavity towards

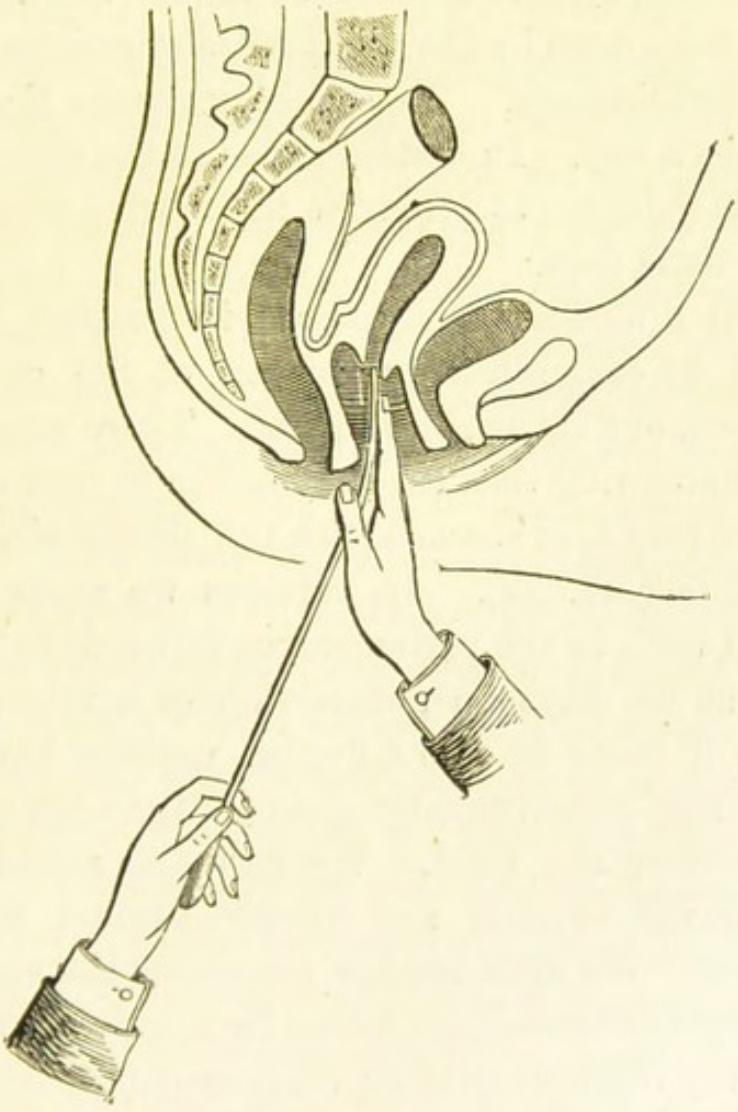


Fig. 30.—Introduction of Uterine Sound.

the perinæum and the handle directed backwards; it is next guided along the index-finger of the right hand to the os uteri. As a rule, with some little manipulation it enters the cavity of the cervix; it is then carried along the cervical canal, and now the handle is turned in the opera-

tor's hand, and by a *tour de maître* is brought round with a gentle sweep, until it is directed towards the perinæum, so as to have the concavity now facing anteriorly, and thus the instrument is brought into the uterine axis in its normal and slightly anteverted position. It is now carried onwards, passing over the forefinger of the right hand still held in position, until it reaches the fundus uteri. This we judge it to have done by the slight sense of resistance we feel to the onward passage. We should not make the woman's sense of pain a test. In certain states of the uterine tissues it would be possible to penetrate the uterine wall and still cause very little pain.

The usual difficulties experienced in passing the sound are caused by contraction or stenosis of the canal of the isthmus uteri, or flexions, or versions. There may be such a degree of narrowing that it is impossible to pass the instrument, or we may only succeed with the pliable silver uterine *probe* of Sims (Fig. 25). In versions we must carry the handle well back to the perinæum, or forwards to the pubes, according as we have an anteversion or a retroversion to deal with; if there be also a flexion, we may have to bend the sound, and endeavour, by giving it the necessary curve, to glide it over the bend. We pass the sound into the bladder in recto-vesical and urethro-vaginal methods of examination. We must always remember the *sine quâ non* of obstetric practice—*before taking the uterine sound* into our hand for any therapeutical or diagnostic purposes, that we exclude the possibility of pregnancy. Also it is well, after all tedious examinations with the uterine sound, if these are done at the operator's house, to take every precaution against cold; and the simplest plan to prevent this is to place a dry plug of absorbent wool in the vagina, to be withdrawn by the patient herself after a few hours. In this, as in a number of other trifling uterine operations, the

immunity from all harm that may have followed us for years will be suddenly and unpleasantly interrupted when we least expect it—the attack of uterine colic or of endometritis, or perimetritis, is suddenly developed, and alarming symptoms may occur that a little prudent forethought would prevent. Take for example the neglect of the sound maxim, to refrain from interference immediately before a menstrual period is approaching.

By keeping the forefinger of the right hand at the os uteri, and placing its tip on the concave surface of the sound, when it has penetrated to its full extent, we can estimate, by the graduated grooves, the exact length of the uterine canal. Before removing it we can test the mobility of the uterus, raise it or replace it in position; and also judge comparatively, by utero-rectal, utero-abdominal, and utero-vaginal examination, of any abnormal connection of the uterus with some neighbouring viscus, or attachments that have formed between it and other morbid pelvic and abdominal formations and growths. In introducing the sound, it may be caught and arrested by some fold of mucous membrane, or the knob (which should always be of fair size) may enter a small follicular cul de sac. By partly withdrawing, and gently passing it on again, we step over the obstruction. Again, at the isthmus we may find its passage impeded. One golden rule must be observed—never use force. Better to withdraw the knob of the sound from the uterus, and with the finger in the vagina give the point of the sound a new curve, bending it a little more forwards or backwards, or laterally, and again try to slip it into the cavity of the fundus. Frequently in severe cases of anteflexion or retroflexion we will succeed in passing the sound by thus repeatedly altering its shape and changing the direction of the handle, until we hit off that which enables it to pass through the altered curve of the uterine canal. In extreme retro-

version we may have to carry the handle of the sound forwards to the pubes, and direct the concavity backwards;* we next feel for the os uteri, and pass the sound onwards, giving the handle such elevation or dip as will assist the knob to pass on into the cavity. When the elbow is reached, by a semicircular sweep, we revolve the sound on its axis and thus alter its direction, while at the same time, by lowering the handle, we raise the uterus from its depressed position.

Test Papers. — An examination of the urine is often required, and indeed few cases of any complicated local or constitutional affection can be viewed satisfactorily, either from a diagnostic or prognostic aspect, unless a urinary examination is made.

In Oliver's test-papers we have the most delicate tests for albumen; and the examination may be carried out at the bedside, all we require being a small test-tube.† I have found the potassio-mercuric-iodide the most delicate of these papers, detecting albumen where heat and nitric acid have failed. The indigo-carmine papers are equally reliable for sugar. We proceed in practice thus:

Take a specimen of the urine. Take its specific gravity at 60°, and reaction with litmus:

Albumen—sp. gr. 1006 to 1010. Test by Oliver's potassio-mercuric-iodide papers; heat, 180°, and nitric acid a few drops—precipitate.

Phosphates—sp. gr. increased slightly; heat, 180°; precipitate obtained, which nitric acid dissolves; phosphatic crystals under microscope.

Urates and uric acid—sp. gr. 1025 to 1030; heat dissolves; hexagonal or rhomboidal crystals of urea, with nitric acid; also uric acid crystals under microscope.

Sugar—sp. gr. 1030 to 1050. Indigo-carmine test of Oliver, and Trommer's test.

* See chapter on 'Retroversion Passage of Uterine Sound.'

† See 'Bedside Urinary Testing,' by G. Oliver, M.D.

Pus—Coagulates with heat; deposit forms homogeneous layer at bottom of glass; becomes gelatinous with liquor potassæ; mixes with the urine; pus corpuscles under microscope.

Mucus—Deposit often glairy, tenacious; urine generally alkaline; is not miscible with urine; rendered less dense by liquor potassæ; acetic acid gives a sort of membrane floating in the urine.

Blood—Discoloration with heat; formation of coagulum; blood corpuscles under microscope.

Clinical Thermometer.—It may seem superfluous to refer to the value of an accurate record of temperature, morning and evening, in arriving at a diagnosis, and conducting the management of a case. The importance of such a record, however, is made more obvious if we reflect for a moment on the causes of nightly exacerbations of temperature, or a daily elevation of a few degrees above the normal standard. In pelvic cellulitis, pelvic peritonitis, perimetritic and parametritic effusion, hæmatocele, metritis, suppurating cysts, acute vaginitis; in chronic peritonitis, suppuration of the cellular tissue or of the abdominal glands; in uræmic and septicæmic states, and cystitis, we may expect that the temperature will rise more especially at night.

With the previous history of a case, an accurately kept chart of the temperature will materially assist a physician in forming a correct diagnosis.

An Anæsthetic is absolutely necessary in cases of rectal exploration, when we require thoroughly to relax the abdominal wall; as in examination of a case in which there is suspicion of phantom pregnancy; and in those cases in which, as in young girls, there is great sensitiveness of the parts, rendering an examination without it extremely difficult, if not impossible. All the usual precautions to be

observed with regard to anæsthetics should be taken. For this particular purpose I consider chloramyl (chloroform with ♏ ii. nitrite of amyle to the drachm) a capital anæsthetic. It should be administered with a Junker's apparatus. I have been using this inhaler for years. Air is pumped through the anæsthetic by the bellows, and the vapour is thus carried to the mouth-piece.

Of recent years for all ordinary surgical operations I use ether—given with Clover's apparatus.

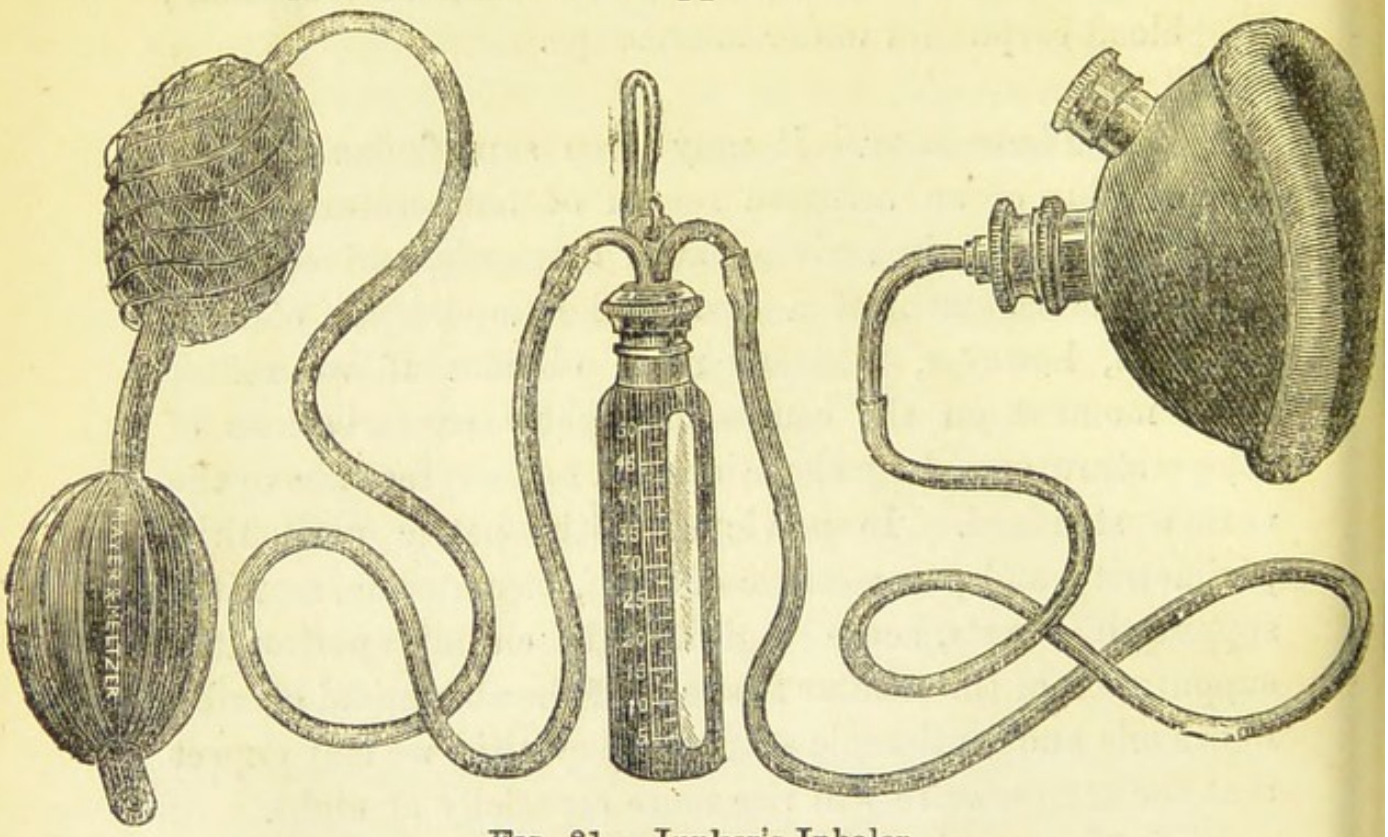


Fig. 31.—Junker's Inhaler.

For the removal of abdominal tumours—ovarian and other—oophorectomy, and cases of abdominal section, bichloride of methylene is to be preferred. It is administered with a Junker's apparatus. I may remark that I have myself administered bichloride of methylene some 1500 times without any accident.

A few rules must be observed with all anæsthetics. Examine the heart and lungs before using any anæsthetic.

Have the patient lying down; the stomach comparatively empty—a little brandy given shortly before examination is often of advantage; let the temperature of the room be over 50°; let the body be free, and all tight clothing loosened; watch *the breathing and pulse* carefully and the countenance all through the administration; be warned of danger by failure in the pulse, and the signs either of cerebral anæmia in the face or of asphyxia. At once, if alarming symptoms occur, cease administration, and use restorative measures; raise the patient's jaw, and thus the hyoid bone, by pulling the lower maxilla upwards and forwards, placing the thumbs behind the ramus at either side; the body may be inverted after Nélaton's method; galvanism may be applied along

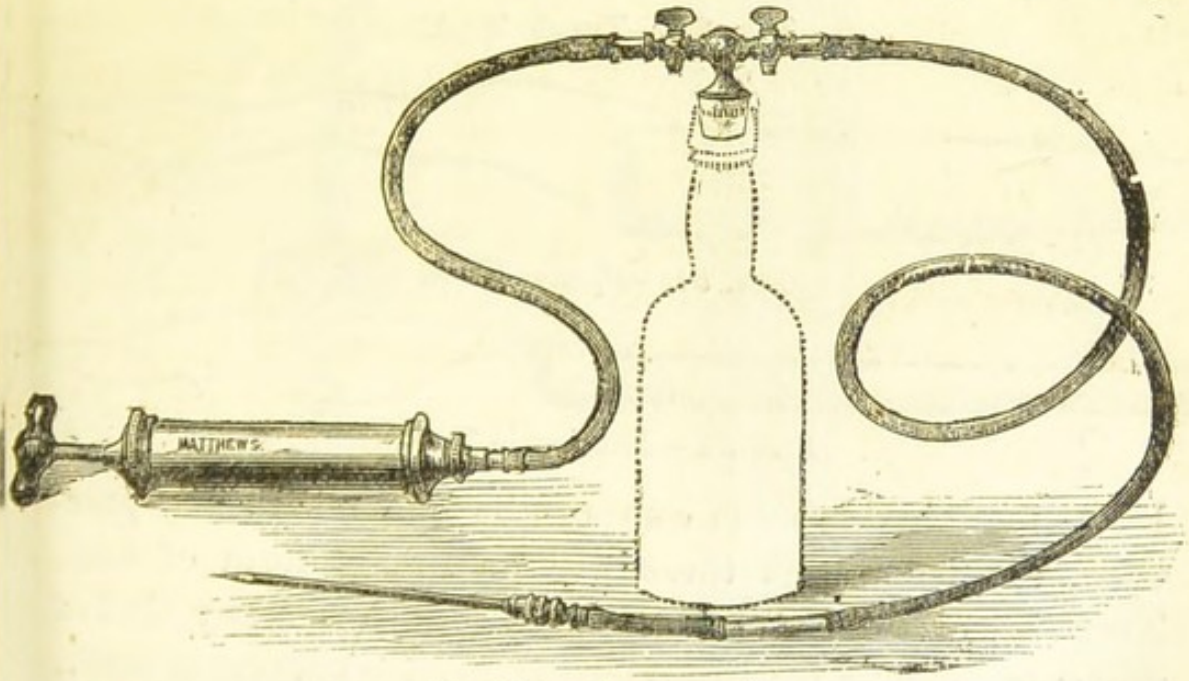


Fig. 32.—Aspirator.*

the course of the pneumogastric or over the heart, and sulphuric ether injected subcutaneously.

An Aspirating Needle or subcutaneous syringe is often required to remove a little of the fluid in abdominal and pelvic tumours, to ascertain its nature by chemical and microscopical examination. We may draw the fluid from

* Messrs. Matthews, Carey Street.

the point of greatest distension—either vagina, rectum, or abdomen.

Tents (Figs. 33, 34, 35) must be employed in certain cases for exploration of the uterine canal, as, for example, in polypus of the uterus, retention of portion of the membranes after abortion, in menorrhagia when we are uncertain of the cause of the discharge. Their employment in many operative procedures I shall have occasion frequently to refer to.

Tents are of three kinds—sponge, sea-tangle or laminaria, and tupelo-root (*nyssa multiflora*). I feel certain that the

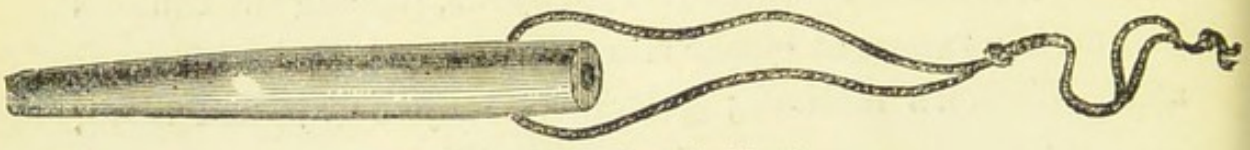


FIG. 33.—Tupelo Tent.

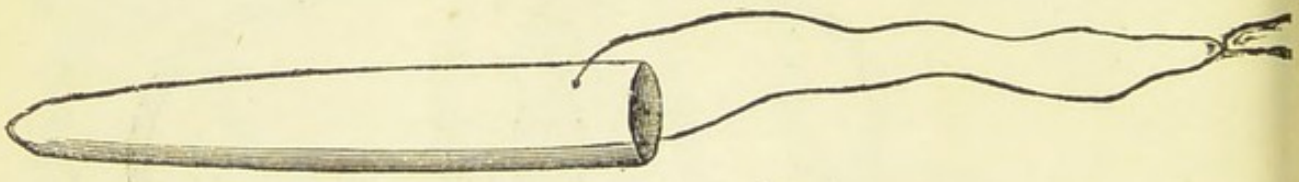


FIG. 34.—Sponge Tent.

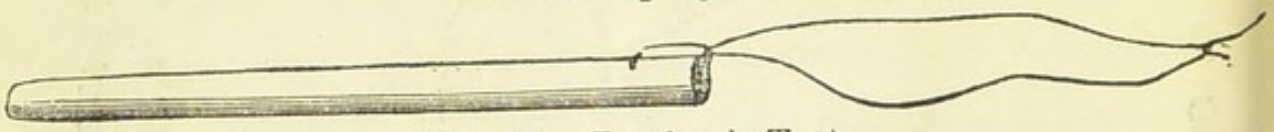


FIG. 35.—Laminaria Tent.

better forcible dilatation comes to be understood and practised, the less resort there will be to any form of tent. There are certain dangers that may follow from any kind of tent: uterine colic, collapse, metritis, peritonitis, parametritis, tetanus, septicæmia. I have twice seen a most alarming condition supervene within three hours after the introduction of a single laminaria tent into the uterus—agonizing pain, symptoms of collapse, fainting, etc. Laminaria tents, if left in too long at first, are apt to break off, and their extraction, save by enlargement of the cervical canal, is a matter of great difficulty. Sponge-tents I never use in strictly gynecological work. I would limit their employment altogether to ob-



36.—Urethral Forceps.

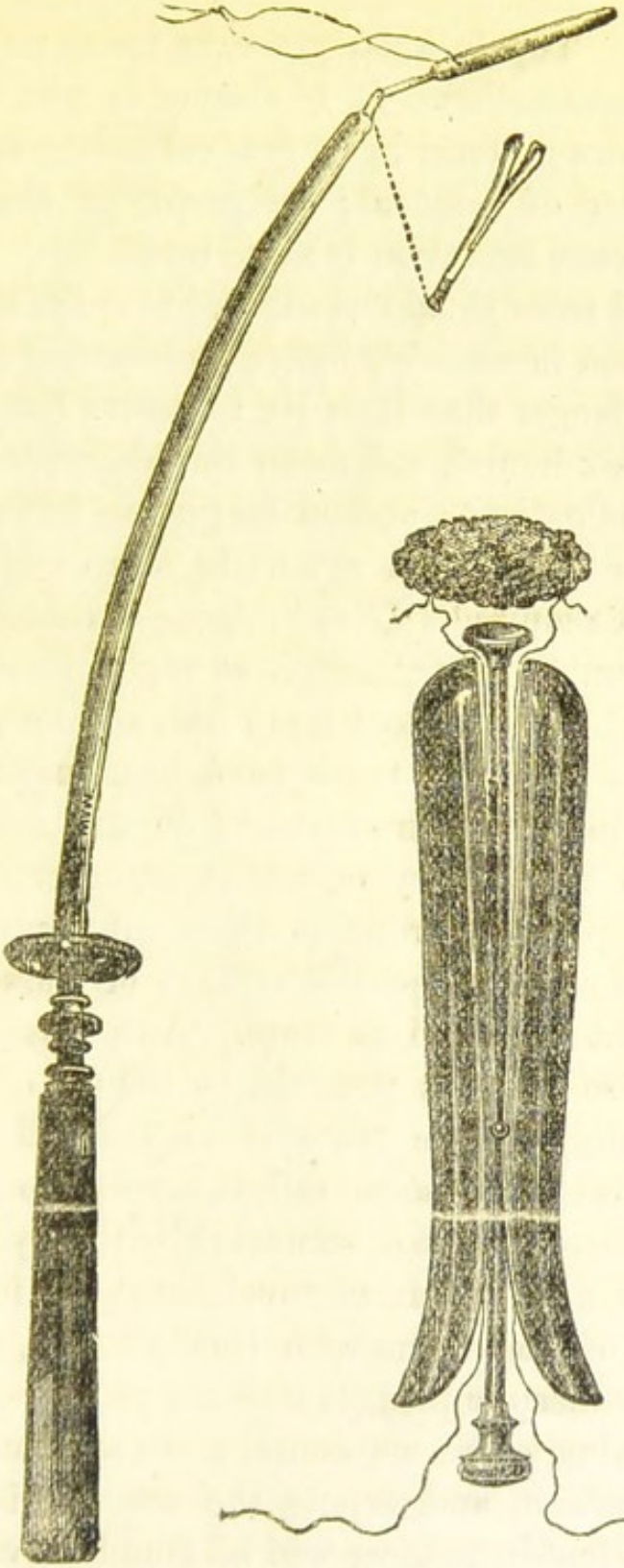


FIG. 37.—Tent Introducer (Arnold).

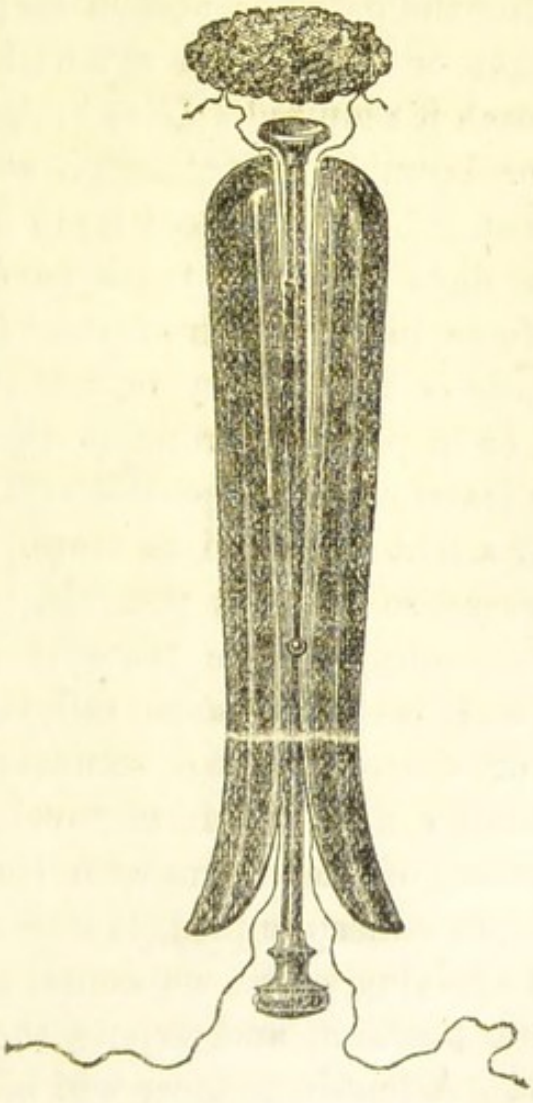


FIG. 38.—Dr. Robert Barnes' Tampon introducer.

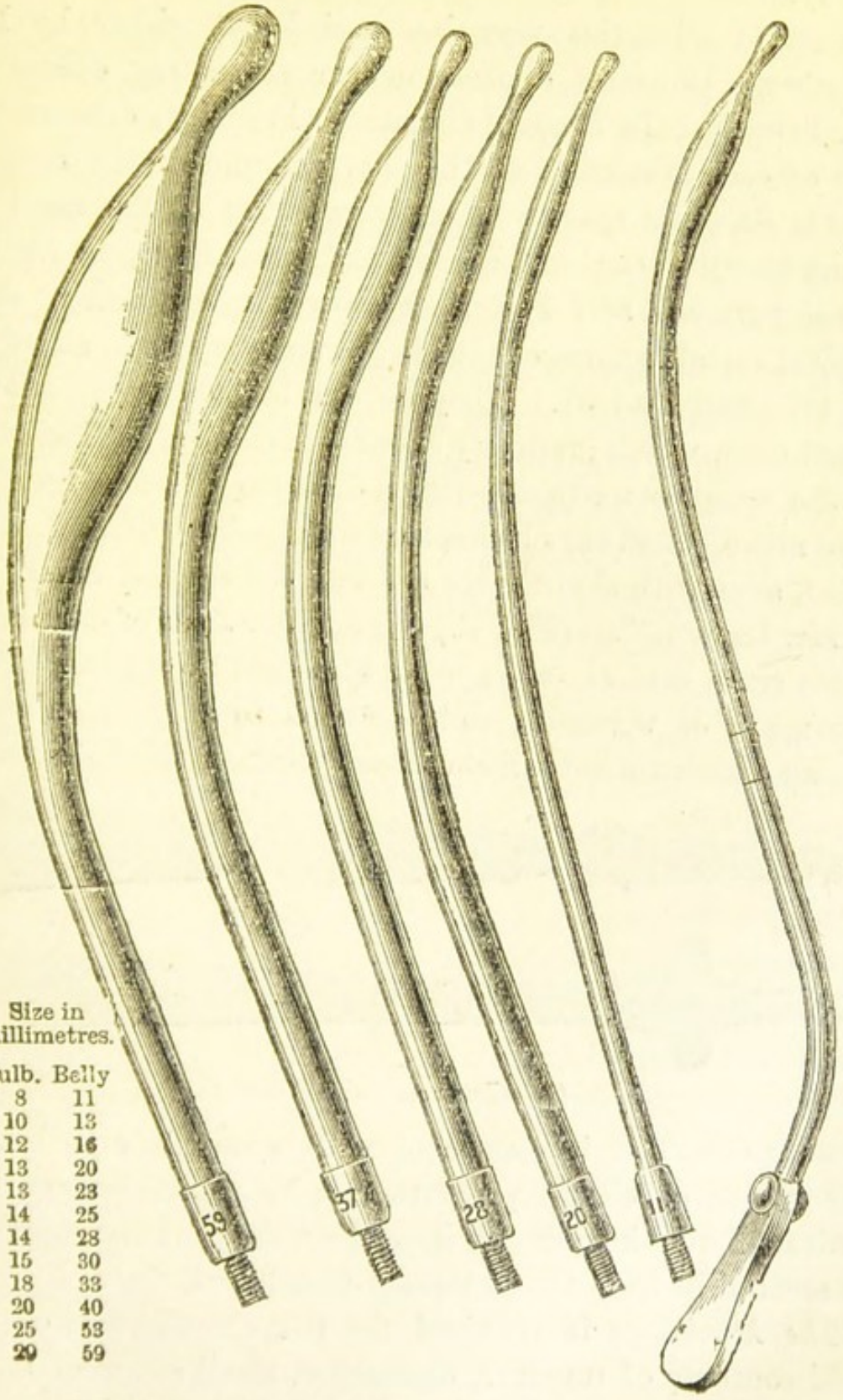


FIG. 38*.—Appliance of Dr. Duke (Dublin), for removing tenacious discharge from cervix.

stetrical cases. Tupelo-wood gives, as far as any tent can, the greatest satisfaction. It is cleaner to use, not so apt to break, is more uniform in its gradual enlargement in the uterus, is easier of removal; its power of absorption is greater, and hence its action is more rapid.

Some special rules should be adhered to in the use of tents. Do not use them *immediately* before a menstrual period; nor leave them in longer than from six to twelve hours (sponge-tent not over six hours), and never this length of time without visiting the patient; and on no pretext leave a patient for a night or a day with a tent in utero without being within reach if required. Give bromide of ammonia (20-30 grains) or bromide of potassium at night, before dilating with a tent. Let the patient lie in bed, and keep her there for a few days after the tents have been used. Do not employ force in their introduction; do not insert a tent when there is any history of recent perimetritis or parametritis, or in patients prone to these inflammations. At all times leave an intelligent attendant or nurse with the case after a tent is placed in utero. Anticipate any septic consequences, so far as is possible, by the use of antiseptic precautions—dipping the tents in carbolic oil before insertion, and inserting some salicylic acid wool into the vagina, or absorbent wool saturated with glycerine and some Condy's fluid; their removal must be followed by free cleansing of the vagina with Condy's fluid, and the insertion of an antiseptic pledget into the vagina.

When applying a tent we should place the patient in the semi-prone position, and expose the uterus with a Sims' speculum. A tent-introducer will be found convenient. If this be not at hand, the stylet of a catheter, made to protrude by cutting about an inch off the end of the catheter, or a long forceps (Fig. 36) will answer the purpose. If any difficulty be experienced, the uterus had better be



Size in millimetres.	
Bulb.	Belly
8	11
10	13
12	16
13	20
13	23
14	25
14	28
15	30
18	33
20	40
25	53
29	59

(Entire Instrument reduced a little more than half-size.)

FIG. 39.—Author's Uterine Bougies; two-thirds size.

drawn well down and fixed with a uterine tenaculum or Sims' hook.

Forcible Dilatation may be carried out either by Dr. Matthews Duncan's dilators or the expanding dilator of Dr. Priestly. In Hegar's (Kumerlé, Freiburg) dilators the size of each is marked on the short handle of the bougie; this is simply a species of catheterization of the canal by short ebonite bougies. I have had specially made for the same purpose, and find they answer much better, solid conical metal bougies of pliable pewter, varying in size from 11 millimetres to 57. They have a bulbous point, with a short neck, which gradually expands into a belly. The curve of the bougie is a circle, having a diameter of 25 centimetres. The metal can always be kept smooth and bright, and, when oiled, slips with slight force through the cervical canal.*

Mr. Lawson Tait (Fig. 40) has devised a set of dilators, in three sizes, conical in shape, as shown in the figure. They are made of vulcanite, and screw on to a common stem. By an elastic thread which passes through the holes in the



FIG. 40.—Lawson Tait's Dilators.

stem-handle, and is connected with a waistbelt by hooks, any degree of elastic pressure can be maintained on the conical dilator introduced into the uterus. Dilatation can be secured in from six to twenty-four hours.

The Microscope is required for the examination of the fluid contents of tumours, discharges, small scraps of tissue removed with curette from the uterus in suspicious cases, or urinary sediments.

* See Appendix.

CHAPTER III.

EXAMINATION OF A CASE (*continued*).

MODE OF EXAMINATION.—I now assume such a pelvic, ovarian, or uterine case as pelvic hæmatocele, ovarian tumour, or fibrocyst of the uterus, brought for examination. Let us proceed to exhaust the means at our disposal so as arrive at a correct diagnosis. Before exposing the abdomen we have taken the previous history, and satisfied ourselves as to the character of the menstrual secretion, the action of bowel and kidney, the temperature and pulse. We judge of the woman's countenance—if cheerful and hopeful, or expressive of pain and anxious; if emaciated or cachectic; if she have the characteristic 'facies ovariana' of ovarian disease. There is, in ovarian dropsy, a strange mingling of emaciation of the face with some anxiety of the countenance, often out of all proportion to the interruption of the general health: it is altogether different to the countenance of pregnancy, and quite distinct from the cachexia of ordinary malignant disease. This appearance of the countenance, however, we must remember is influenced by complications, such as phthisis, hepatic or renal disease, pregnancy, malignant disease of the ovary. But in hepatic and renal disease we have other evidence in anasarca, or icterus, or distended abdominal veins, or œdema of the face and hands or feet, or albuminuria, and perhaps cardiac complication, to indicate the cause of the distension. We now proceed to examine the abdomen. I cannot insist too emphatically on the care

with which we should explore the abdomen, before we proceed to any internal examination. We do it thus:

Its Shape.—We notice if it is barrel-shaped and arched, as in ovarian dropsy, or if the swelling is unilateral or uniform; if the sides bulge, more or less, as in ascites, or if the tumour is evidently central, and if its ratio of increase has been regularly progressive, as in pregnancy; if there are distinct swellings in different regions, and the surface of the abdomen is irregular in outline, as in multilocular cysts, malignant solid tumours, tumours of the liver and spleen.

The Umbilicus, if it is prominent as in pregnancy; bulging and watery-looking as in ascites; drawn in as in solid tumours with adhesions, and in malignant cases.

The Appearance of the Skin, if tense and thin, showing the prominent recti muscles underneath; or œdematous, with a characteristic watery look; or if it be laden with fat; if marked with lineæ albicantes, cracks, scars, maculæ, or eruptions.

Measurements: greatest circular at umbilicus (more likely) in ovarian dropsy, if below it in ascites; lateral measurements to determine the symmetrical nature of the growth—or unsymmetrical during the early months of growth of an ovarian cyst, symmetrical in pregnancy.

Palpation.—Nothing save experience in educating the finger to differentiate the various forms of tumours, solid and fluid, and any enlargements of the abdominal and pelvic viscera, can teach abdominal palpation; it is not to be learned by any verbal description. The size of an organ, the extent of an enlargement, the degree of hardness or softness, the character and extent of fluctuation, the nature and direction of the pain caused by pressure, the appearance of the fluctuating wave, and the sensation of superficiality or depth conveyed to the hand when testing the abdomen for this sign—all have to be kept in mind in

palpation. A few directions may, however, be of service. Have the patient's head and shoulders supported with a pillow; have the surface of the abdomen from the sternum to the pubes exposed; stand in front of the patient and lay the palms of the hands lightly and flat on the abdominal wall; gradually pass over the various abdominal regions, hypochondriac, epigastric, lumbar, umbilical, inguinal and hypogastric. With the fingers explore these spaces carefully; watch the patient's countenance for indications of shrinking or pain; define as far as possible the limits of any growth, the region it occupies, its connection with surrounding viscera, if fixed or movable, if hard or nodular, if soft or fluctuating; get the character of the fluctuation, if superficial or deep-seated. Lay now the hand on one side of the abdomen, and tap lightly with the fingers on the opposite side and feel the nature of the transmitted wave; judge, by watching its movement under the skin, of its depth (deeper wave in ovarian dropsy) and, by its freedom of motion in all directions, of the character of the cyst in which it is confined, unilocular or multilocular, and if the fluid itself be encysted or circumscribed, or free.

It is quite possible in a very fat patient to mistake the 'fat-thrill' for fluctuation. 'To muffle this,' says Goodell, 'I ask one of my assistants to lay the ulnar edge of his hand along the linea alba. The pressure of the hand will act exactly like the damper-wedge of the piano-tuner, which muffles the sound of one string while its fellow is being tuned. By this means I get the wave-tap of a fluid, and am enabled unhesitatingly to say that there is a liquid collection in the abdominal cavity.' So a fat abdominal wall may completely obscure the diagnostic aid we obtain from our sense of touch, and has doubtless led to many of the errors of our practice, recorded and unrecorded, in the operative interference with abdominal enlargement.

Percussion.—We require to distinguish the relative degrees of dulness or resonance in the different regions, above the umbilicus, below it, and in either flank, and the influence of posture on the percussion note. The rule is, that ascitic fluid falls with gravity, if the fluid be free in the peritoneal cavity and not restrained by adhesion, or into the most dependent position, which is, in the sitting position, the lower zone of the abdomen, and in the recumbent posture, the flanks. Hence these regions will give a dull note.

In ovarian dropsy, on the other hand, the cyst rising up from the pelvis is in front of the intestines, which are displaced to either side, so that the anterior surface of the abdominal wall yields a dull sound and the flanks are resonant. Nor is the dulness changeable with posture, as a rule, and never to the same extent as in complicated ascites. The complication of pregnancy with ascites or hydramnios, of ovarian dropsy with pregnancy or ascites, and the existence of cysts of the liver or kidney which we occasionally find, compel us to be very cautious in placing reliance on percussion in diagnosis. The abdomen must be most cautiously examined for the different conditions likely to be confounded with pregnancy. It requires most patient and careful listening to detect occasionally the fœtal heart-sounds, especially if there be a very fat abdomen, or any ascitic fluid in the peritoneum, or hydramnios, or if the fœtal pulsations be very weak and rapid. We have to be careful not to fall into an error that I have known occur in a patient with a very rapid pulse, and having an abdominal tumour which proved to be fibroid ; the rapid aortic pulsations were transmitted to the tumour, and an opinion formed, consequently, that the woman was pregnant.

Digital Examination.—We now proceed to make a vaginal examination. The patient may be laid on her side, or, better, on her back, as I have previously described. The

nail of the examining finger should always be pared close. We then anoint the finger thoroughly with some lard or vaseline, and convey it gently into the vaginal canal. Before doing so, on separating the labia, it may be well to inspect the vulva for any swelling, excoriation, discharge, sores, or tumours, and at the same time note the appearance of the clitoris, urethral orifice, hymen (if present), the fourchette, and perinæum. We pass the finger on in search of the cervix uteri, noting the temperature of the vagina. Having reached the uterus, we examine the condition and feel of the os uteri, if normal or abraded, soft, patulous, or fissured; its shape and size. The cervix uteri is next examined, as to its position, shape, length, and degree of hardness. Placing the finger firmly on the cervix, we estimate by pressure the mobility of the uterus. At the same time we contrast the anterior and posterior wall of the cervix, examine for any sulcus in the uterus, any special hardness in the uterine wall anteriorly, any fibroid which may here be developing, or anteflexion. The finger is now swept, commencing anteriorly, round the vaginal roof, and any fulness, contraction, hardness, or swelling is detected and examined. The degree of tightness or stretching of the vaginal roof is estimated. We next pass to the posterior aspect of the uterus, and explore the utero-rectal space and the pouch of Douglas. In this latter space we may find a tumour, ovarian cyst, a fæcal accumulation, some cellular and peritoneal effusion, retroversion of the uterus, or prolapse of the ovary. While thus examining, we do not forget the presence of stone in the bladder, which may be detected through the vaginal wall in front. Before withdrawing the finger we satisfy ourselves thoroughly as to the character of recent effusions, the size of the ovaries, or if there is the remains of any old effusion, lymph, pus, or blood occupying the cellular tissue or the peritoneum.

Conjoined Examination.—This we carry out either by the two hands or by the sound and hand.

By the hands.	Abdomino-vaginal. Recto-abdominal. Recto-vaginal.
By the sound and hand.	Utero-abdominal. Utero-rectal. Recto-vesical.

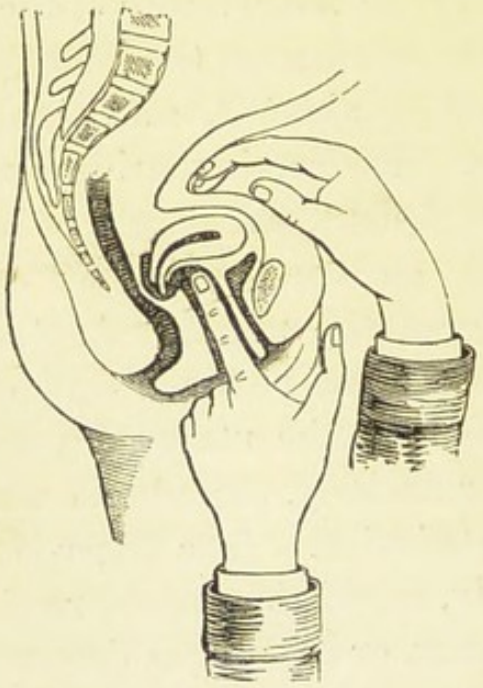


Fig. 41.—Abdomino-vaginal Examination (Schrœder).

Abdomino-vaginal.—We want to ascertain the size of the uterus, its degree of mobility, its sensitiveness; the condition of the bladder, ovaries, and broad ligaments. We do this in the most satisfactory manner by placing the fingers of the right hand on the abdominal wall above the pubes, and the index-finger of the left in the vagina resting on the cervix (behind it if the uterus be retroverted), thus getting the organ to rest between the two hands in the manner shown in the diagram. In every case of obscure uterine affection, when we wish to know accurately the volume of the uterus and its relative increase in size, this is an indispensable step in our examination.

Recto-abdominal. — Withdrawing our finger from the vagina and again anointing its surface well with some carbolized vaseline, we pass it gently into the rectum; in doing so, we reach, unless the uterus be retroverted, the cervix uteri, and feel it prominent in the anterior wall of the rectum; depressing the uterus now well with the fingers on the abdomen, we reach the ovaries, which can again be explored and their size and sensitiveness ascertained. We may also satisfy ourselves of the volume and position of the uterus, of the dimensions of a fibroid or a retro-hæmatocele; while we likewise judge of the degree of congestion of the rectal mucous membrane, and the extent to which the rectum is interfered with either by cellular effusions, collections of fluid, or tumours in Douglas's space, or a retroverted or retroflexed uterus.

Recto-vaginal.—Still keeping the finger in the rectum, we insert the index-finger of the other hand into the vagina, or if we prefer it, we may withdraw the index-finger and introduce the middle finger into the rectum, while we explore the vaginal wall with the index-finger of the same hand. Examination of the rectum often gives such distress to the patient that the less frequently we introduce the finger into it the better. Therefore, I generally prefer to use the index-finger of the right hand, the woman lying on her back, the left forefinger remaining in the rectum. We can thus in the very best manner determine the state of the rectum, the utero-rectal space, the position and size of the ovaries, the character of any tumour, swelling, or effusion between the uterus and rectum.

Recto-vesical.—We may now take up the uterine sound and slip it into the bladder while we retain the finger in the rectum. We thus are enabled to judge of the position and size of the uterus in fat women, in whom palpation is difficult, of its presence in atresia of the vagina, of its

absence in inversion of the uterus, and thus to diagnose between inversion and polypus. While the sound is in the bladder, if there be vesical irritation, we may explore its cavity, judging of its capacity and how far it is encroached on by the *uterus*, while we exclude the existence of stone. (Fig. 42.)

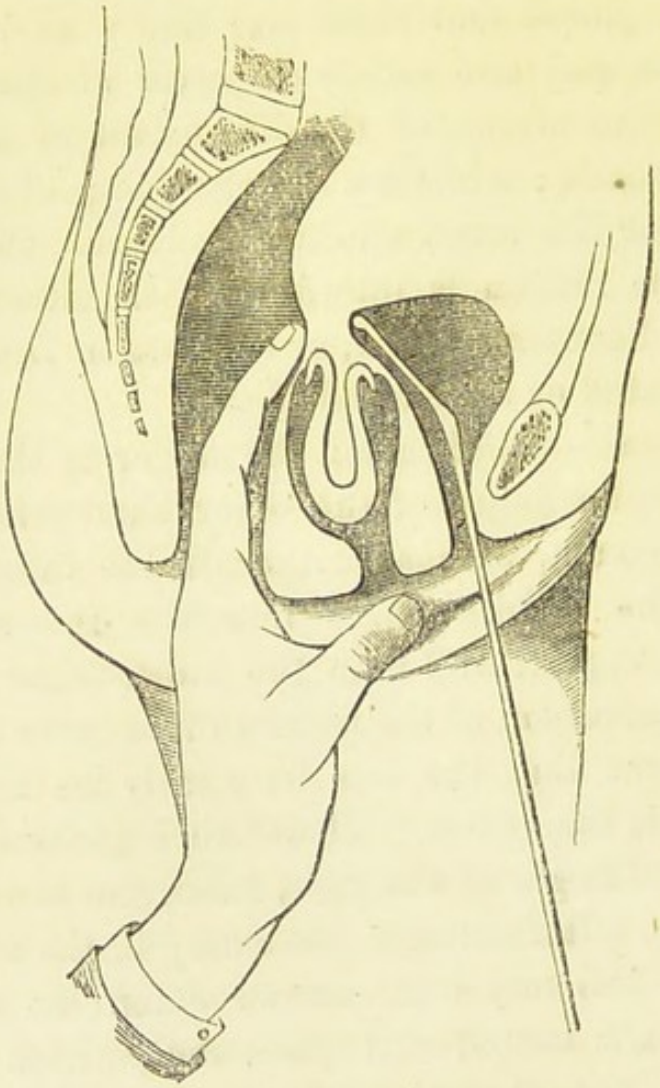


FIG. 42.—Recto-vesical Examination in complete Inversion of the Uterus.

Utero-abdominal. — Having passed the sound into the uterus and judged of its sensitiveness, position, and mobility, and the length of the uterine cavity, or the presence of any obstruction, we place, as before, the finger of the right hand over the pubes and manipulate the uterus on the sound. In diagnosing the relations of

abdominal tumours, their connection with the uterus, and the extent to which the uterus is involved by fibroid growths, or polypus, the utero-abdominal method will be found to give most valuable assistance.

Utero-rectal.—Still retaining the sound in the uterus and passing the finger into the rectum, we can, in a similar manner, examine the posterior wall of the uterus, judge of intramural fibroids, any adhesions posteriorly, the degree of retroversion, and how far the uterus is fixed by cellular effusion, or involved in a retro-hæmatocele and its freedom of movement limited.

Other steps.—In a large proportion of cases the examination just detailed, in part or whole, will enable us to arrive at a conclusion as to the nature of a case. It may, however, happen that doubt still remains. There is some discharge from the uterus, and we have to satisfy ourselves as to its source and nature. On examination with the finger, the feel of the os uteri and cervix prompts us to use the speculum. An abdominal tumour exists, regarding the exact nature of which, or its contents, we are not perfectly satisfied. There is a quantity of abdominal fat or tympanitic distension of the abdomen, or the difficulty has been great of making a satisfactory examination of the patient through nervousness, or sensitiveness and tenderness of the vagina.

Speculum.—In the first instance, we have to use the speculum to examine the os uteri and see any discharge that may be issuing from it ; and it may be requisite to see with it the vaginal walls, if they are stripped of epithelium, or granular and secreting a quantity of vaginal mucus. A beginner may have some difficulty in passing the sound in the usual manner into the uterus. By placing the patient in the semi-prone position and using Sims's speculum, or on her back and inserting a tubular one, he can bring the os uteri into view ; and then, if the uterus is in its normal position or anteverted, by dipping the sound well

down he can, unless there be some obstruction, pass it on into the cavity.

Tents.—Secondly, a tent or uterine dilator may have to be employed, if we desire to explore the uterine canal in cases of suspicious and prolonged hæmorrhage, where we suspect intra-uterine or placental polypi, or where there is septic discharge the consequence of any intra-uterine decomposition.

Aspiration.—And lastly, we may draw off a small quantity of fluid from a doubtful abdominal swelling, to determine its nature by chemical or microscopical tests; this may be done with the ordinary hypodermic syringe or aspirating needle. The aspirator is specially useful for diagnosis in doubtful pelvic and uterine enlargements, such as retro-hæmatocele, cystic tumours in Douglas's space, pelvic cellulitis, and retained menses (Fig. 32).

Anæsthesia.—It is in those cases in which difficulties arise either from the quantity of fat in the abdominal cavity, or gaseous distension in the bowel; where there is great pain and sensitiveness on the least attempt at examination; and where we have a patient debilitated or weakened by previous prolonged suffering, that an anæsthetic is specially called for. In children and very young girls an anæsthetic is essential in order to make an examination. Junker's apparatus (Fig. 31), is by far the best and safest I know of—both for the administration of chloroform or methylene.

Rectal Exploration.—Simon's Method.—This plan of exploration of the abdominal viscera is seldom practised in this country. In the instance of a mesenteric mass causing partial ascites and abdominal enlargement, I was recently assisted in diagnosis by rectal palpation of the pelvic viscera. The woman is fully anæsthetized. She is placed in the lithotomy position, her thighs are well drawn up to the abdomen; the sphincter ani is then thoroughly dilated by the fingers, or better, by the thumbs; gradually the hand

well oiled, in the form of a cone, is most cautiously introduced in a rotatory fashion; when the hand has passed into the bowel, the fingers can be separated a little so as to explore the pelvic organs. A few fingers may be passed on into the sigmoid flexure of the colon. My hand measures at its greatest circumference eight inches; this I have introduced without lacerating the anus. It is hardly necessary to point out how cautious must be the manner in which this procedure is conducted, and how seldom is it necessary while practising the other means of diagnosis at our disposal.

Discharges.—In inflammatory states of the female genito-urinary organs the nature and character of the discharge found, on vaginal examination, coming from the uterus, or in the vagina, and spontaneously appearing at the vulva, is of considerable moment in the diagnosis.

The following table may assist the student:

DISCHARGES.

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
Watery (hydrorrhœal), and mixed.	Uterus—accompanying and following pregnancy; associated with malignant disease, hydatids.—Vagina, vesico-vaginal fistulæ, rupture of ovarian cyst. Discharge frequently physiological, both from uterus and vagina; the quantity of water the vagina can secrete is shown in the profuse discharge after a glycerine plug is worn in it.	At times colourless, or mixed with blood, variously coloured, with cells of different kinds, or containing shreds of decomposing débris, or hydatids, or urine.

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
Mucous and epithelial, often containing epithelial débris, oil globules. Frequently only physiological exaggeration of the normal secretion, as in pregnancy, or associated with menstruation.	Fallopian tubes. Cavity of fundus uteri. Canal of cervix uteri.	Whitish, alkaline, columnar epithelium; at times viscid, like unboiled white of egg; when aggravated, fills the cervix and os uteri as a tenacious plug most difficult to remove, and is quite characteristic of endometritis. It may be the cause of sterility. Where the secretion is simply increased and attends corporeal leucorrhœa, it is known as the 'whites,' and is as a rule a proof that the general health is not good.
	External surface of cervix and the lips of the os and fundus of the vagina. Seen occasionally in excess during pregnancy.	Acid reaction; varies in consistence—generally thick, creamy, white or yellowish-white, adhering often closely to the os and cervix

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
		uteri and almost membranous in character; squamous epithelial cells, oil-globules.
	Some portion of vagina.	Acid mucus; character depends on the nature of inflammation; contains at times parasites and fungi—Trichomonas vaginalis; Leptothryx buccalis.
Sebaceous, readily becoming purulent.	Vulva, labia, vulvo-vaginal glands, sebaceous glands.	Acid, fatty mucus, oily particles, epithelial cells.
Pus.	Purulent discharges may come from the Fallopian tubes, the result of salpingitis; from any part of the uterus, mingled with mucus; from the vagina and vulva. Pus may find its way into the uterus through fistulous openings, and into the vagina either by bursting of a suppurating cyst which has formed adhesions, or the escape of pus from a pelvic abscess	The appearance of the purulent secretion will in great measure depend on its source and the form of inflammation that has produced it: it may be profuse and thick, scanty and thin, very fœtid or almost odourless, tinged with blood or rusty-looking,

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
	the consequence of parametritis or a pelvic hæmatocele.	or of a dirty greenish colour. The discharge of vaginitis is, as a rule, profuse, pouring in quantity, and is, especially if it be gonorrhœal, thick and yellow and persistent. It is mingled with epithelium.
Hæmorrhagic (excluding the hæmorrhages of pregnancy).	Blood may pour from any portion of the generative tract. We have three principal heads under which we may classify the occurrence of all hæmorrhage :— 1. Menstrual or altered menstrual flow. 2. Disease occurring in any part, as in salpingitis, metritis, endo-metritis, catarrhal cervicitis, subinvolution, uterine fibroid, polypus of any kind, granulations, vascular tumours, urethral caruncle. 3. Traumatic-injuries—operations. Vagina.—Same constitutional causes as	The blood at times is mixed with menstrual discharge or is merely altered menstrual flow, excessive in quantity (menorrhagia); the blood is then mixed with the débris of uterine tissue, epithelial cells, fatty and oil particles, mucus corpuscles, or, if there be ulceration, pus, and the products of inflammation.

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
Hæmorrhagic.	produce hæmorrhage from the vulva; granulations; abrasions; ulceration; varicose states; thrombus; traumatic causes; malignant disease. Rectum.—Hæmorrhoids; congestion of the rectal mucous membrane; fissure; ulcer; malignant disease; traumatic causes. Bleeding from the rectum may accompany hæmorrhagic discharge from the vulva and vagina. Vulva; in the exanthemata — (variola, typhoid and typhus fevers, measles); spinal meningitis; malignant ulceration; gangrene; noma; thrombus, varicose conditions; various blood states, as in leucocythæmia and scurvy; in the hæmorrhagic diathesis; wounds, operations, coitus; from vascular excrescences, and tumours.	May be arterial or venous, dependent upon its cause, whether there is active or passive congestion, due to direct rupture of vessels from ulceration and slough, or their injury by laceration, or wounds of any kind. In the various blood conditions and exanthemata, the blood poured out is generally dark and does not readily coagulate, rendering the hæmorrhage difficult of suppression.
I. Those hæmorrhages	Uterus.—1. Simple menorrhagia — physio-	

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
connected with menstruation and often associated with irregularity of the menstrual periods.	logical excess attendant upon ovulation; in plethoric states from excess of coitus; excessive menstruation at the 'change of life'—during the menopause; from suppressed skin secretion; the result of cold taken previous to or during menstruation.	
2. Hæmorrhage due to disease elsewhere.	2. Uterine hæmorrhage dependent upon hepatic, cardiac and renal affections; in phthisical states.	
3. Hæmorrhage due to abnormal uterine states, and morbid changes in the uterine tissues.	3. Uterine hæmorrhage associated with uterine hyperplasia, subinvolution, hypertrophy; versions and flexions, simple congestion, of cervix or body, stenosis, metritis, endometritis, fibroid enlargements, polypi, granular states of the endo-metrium, fissure of the os uteri and cervix, thrombus, malignant disease, extra-uterine fœtation, syphilitic disease, wounds.	

DISCHARGES—*continued.*

CHARACTER.	SOURCE.	APPEARANCE AND PROPERTIES.
Air (physometra). The air is expelled by the muscular action of the vaginal wall.	Vagina and uterus. In the knee and elbow position air enters the vagina more or less readily; the vaginal walls separate. Also in the semi-prone position. Air may accumulate when a pessary is worn; if there be a fistulous communication with the bowel; or in prolapsus uteri.	

The Microscope.—We bring the microscope to our assistance in the examination of suspicious discharges; the cells contained in cysts,—ovarian, hydatid, malignant. In those cases of disease of the fundus or cervix in which, as in schirrus, we may be uncertain of the nature of the growth, we may remove a little with Simon's scoop or a curette for microscopical examination.*

Exploratory Incision.—Having exhausted all our means of diagnosis, and doubt still remaining in a case of abdominal tumour, where the question of operation arises, there remains still abdominal incision and exploration. This is not to be resorted to save as a *dernier ressort*, as in itself the step is not devoid of danger. Yet the magnificent results of Mr. Lawson Tait, of Birmingham, which cannot be gainsaid, prove how abdominal section may be brought to perfection by a careful, discriminating and bold operator. (See chapter on uterine fibroids.) A small incision is made through the skin

* See chapter on 'The Ophthalmoscope in Diagnosis.'

over the linea alba; is carried on carefully through the cellular tissue, fat tendinous structures, and subperitoneal tissue. All bleeding is carefully arrested by torsion or ligature. The peritoneum is now examined and the shining wall of an ovarian cyst may be seen lying underneath; the peritoneum is carefully raised by a tenaculum, and a small opening made which is enlarged on a director for the extent of an inch and a half to two inches. We are thus enabled to examine the adjacent cyst-wall and search for adhesions.

It may be well to notice a few appliances often required in the diagnosis of a case, and which have not as yet been referred to.

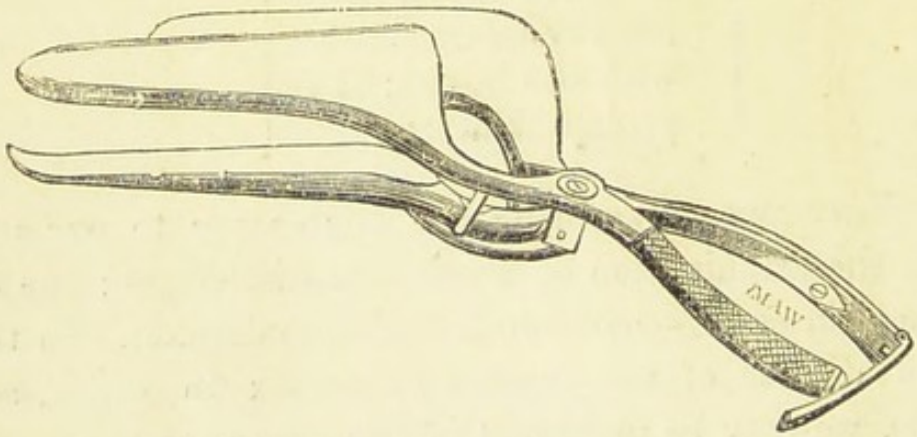


Fig. 43.—Lane's Rectal Speculum.

Rectal Specula.—When the rectum has to be examined for fistulæ, fissure, ulcers, or hæmorrhoids, we require a speculum (Fig. 45). The patient is placed on the couch, the nates are drawn well to the edge, and the thighs flexed. The specula I prefer are those of Mr. Gowland (Fig. 45), or the three-bladed one of Mr. Lane (Fig. 43). Whichever is used we require a good light, and to introduce the speculum slowly and gently.

Occasionally we may wish (as in removal of polypi and for complete uterine exploration when there is hæmorrhage) to dilate the uterus with Barnes's hydrostatic dilators. Fig. 47 shows a useful combination of Higginson's syringe

fitted with one of these bags. When the cervix is sufficiently dilated by a tent, or by forcible dilatation, the bag can be introduced into the uterus by means of the uterine sound or finger, and then distended gradually with water.

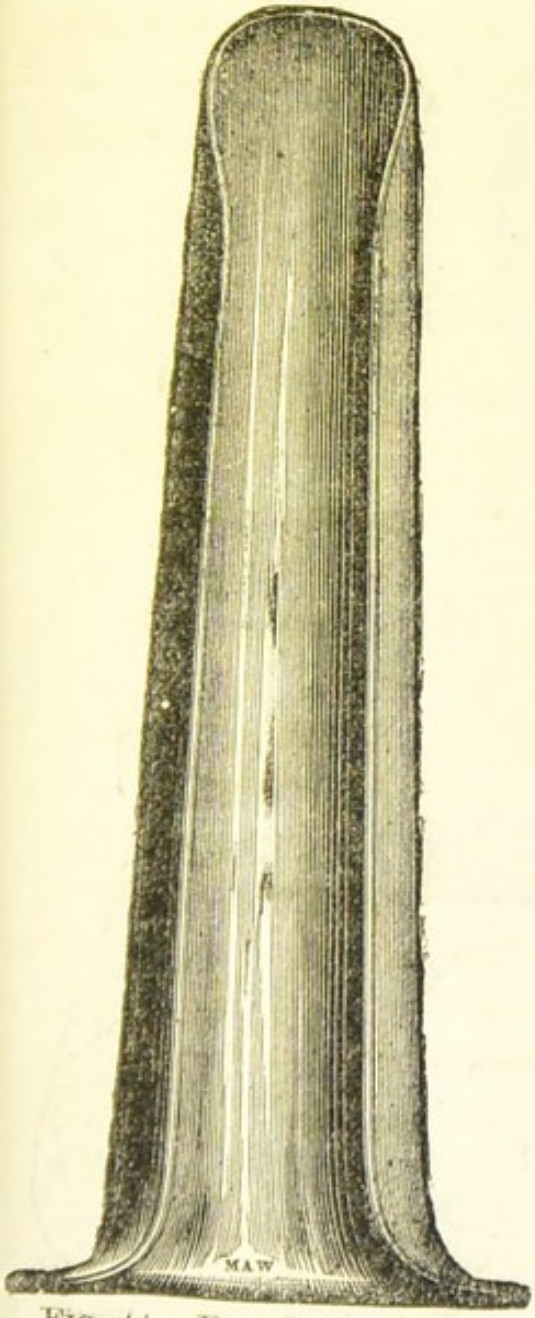


FIG. 44.—Rectal Speculum.

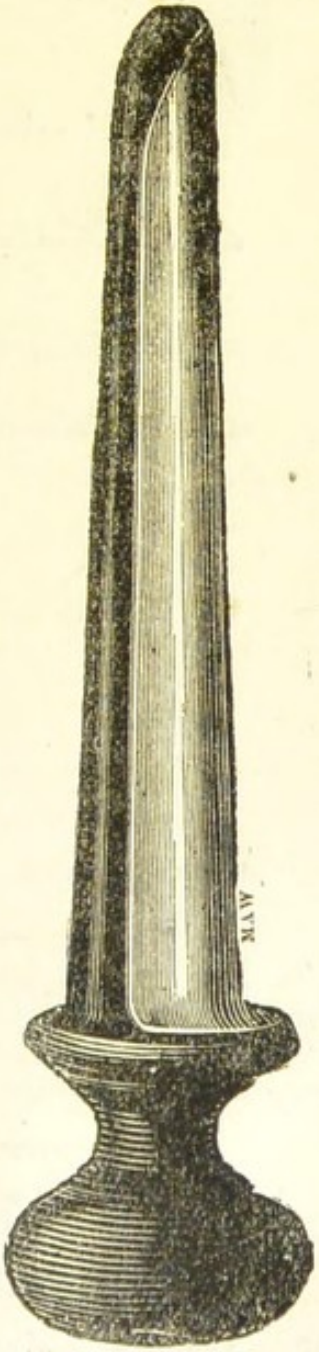


FIG. 45.—Rectal Speculum (Gowland's).

To explore the urethra, such an instrument as Bryant's (Fig. 46) conical dilator may be used, or the three-bladed one of Maw (Fig. 48). I prefer my uterine bougies as



FIG. 46.—Bryant's Urethral Speculum.

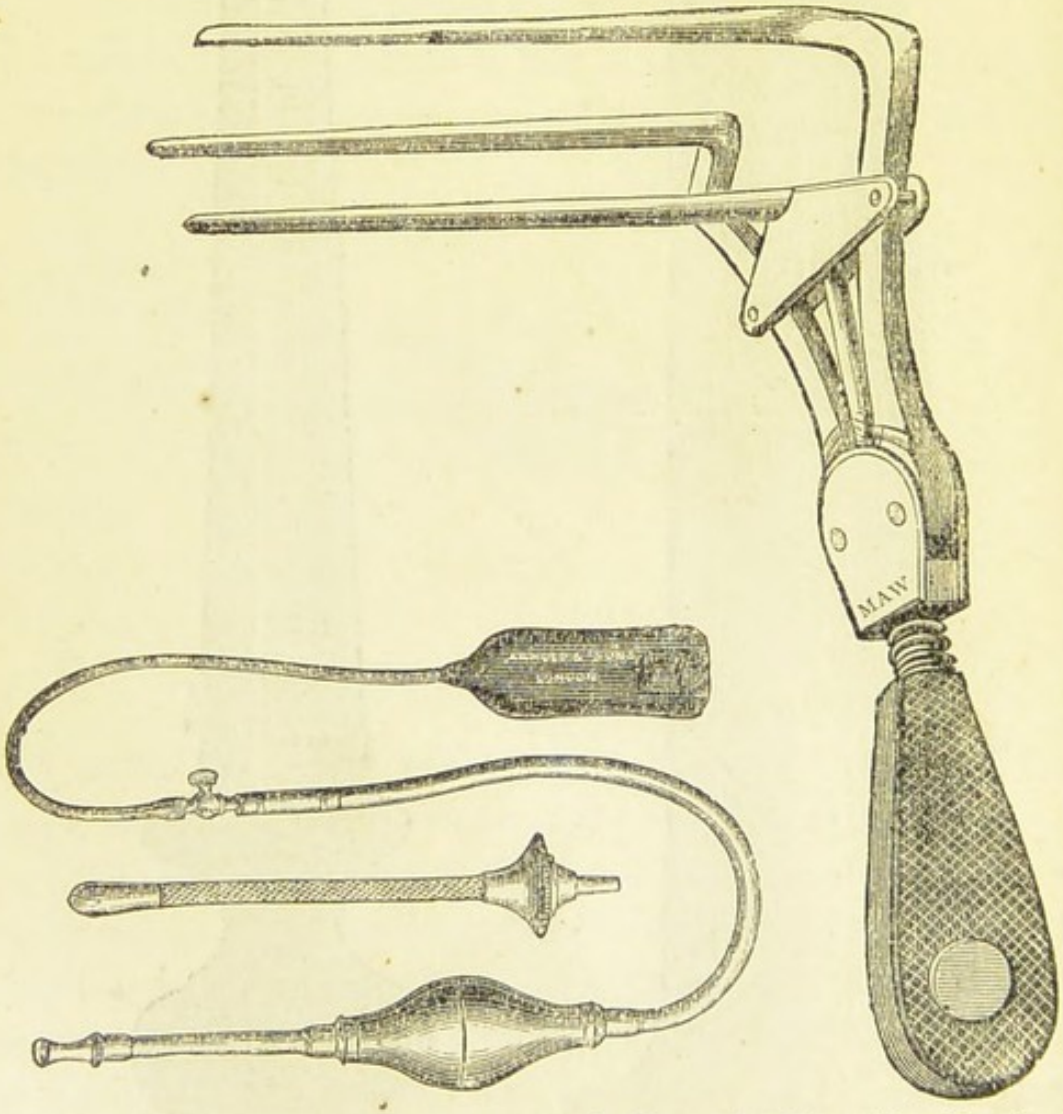


FIG. 47.—Arnold's combination of Barnes' Dilator and Higginson's Syringe.

FIG. 48.—Urethral Dilator (Maw).

dilators, assisted, after sufficient dilatation, by the finger. If nothing else be to hand, a small glove-stretcher answers admirably. It is necessary in making a careful diagnosis to

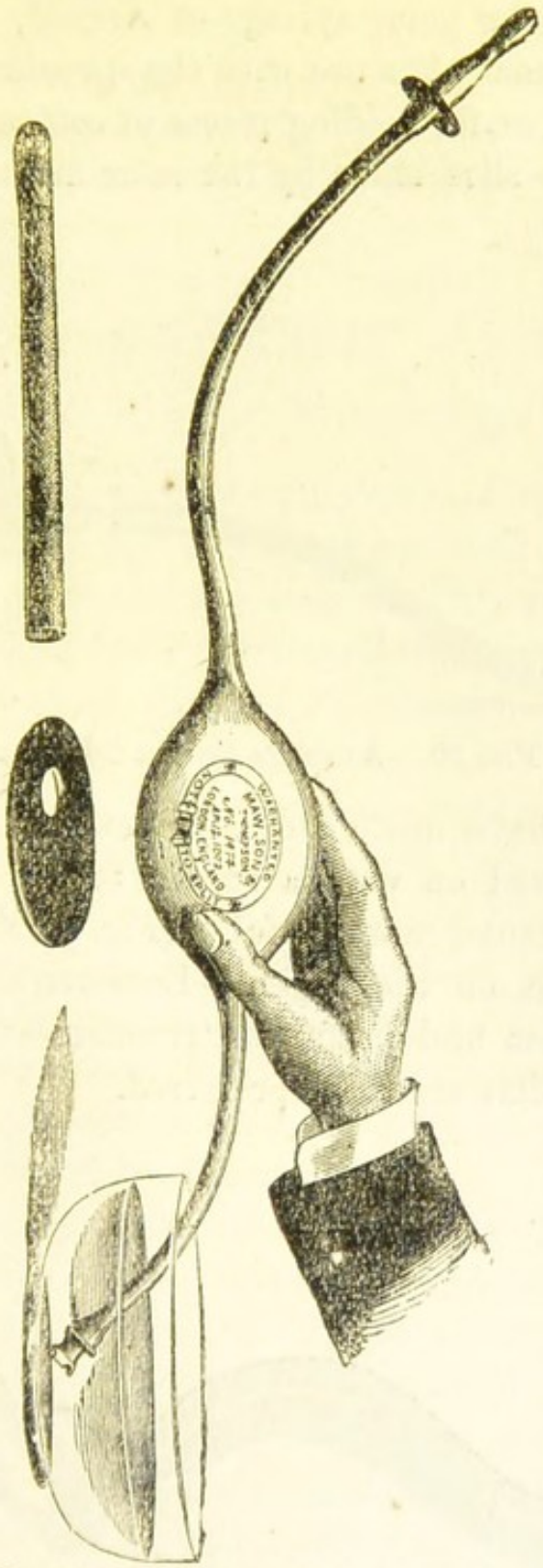


FIG. 49.—Maw's continuous Syringe.

first empty the bladder and rectum. A continuous acting syringe is required for washing out the vagina. This modification of Higginson's syringe of Messrs. Maw will be found

very useful, or the pump-syringe of Arnold, which answers also for an enema. For use with the speculum, after douching the vagina, or for holding pieces of cotton-wool, etc., the small vulcanite slice made by the same firm is convenient.

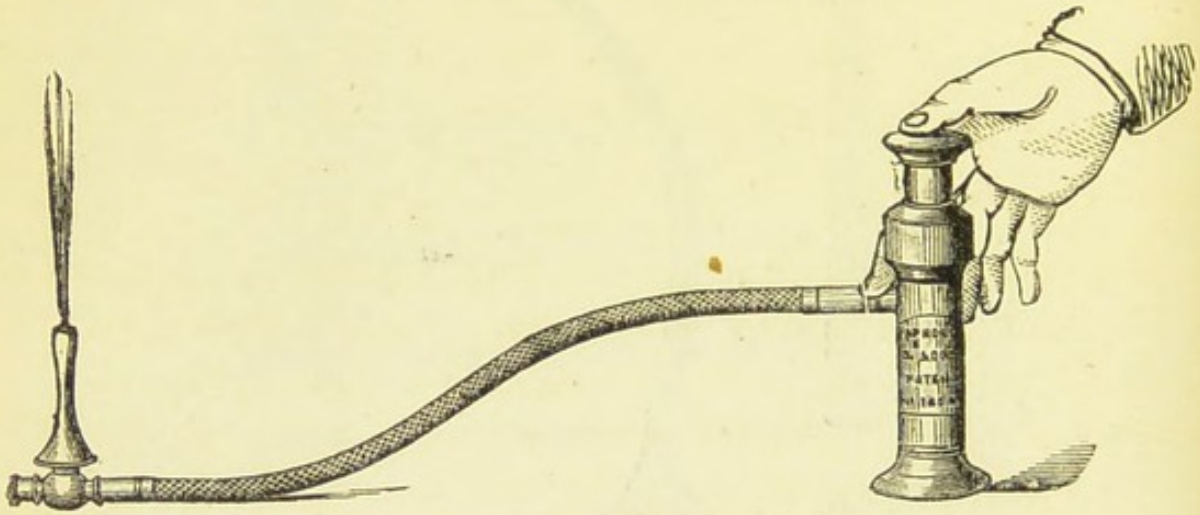


Fig. 50.—Arnold's Enema Syringe.

Messrs. Maw have made me a convenient speculum slice that can be fixed on with a spring to the speculum, and which will be found most useful. (Fig. 53.)

In operations on the vagina—Bozeman's retractors are most convenient and useful instruments—the fenestrated retractors of Sims are to be preferred.



Fig. 51.—Bozeman's Retractor.

CHAPTER IV.

SOME MINOR GYNECOLOGICAL OPERATIONS.

APPLYING NITRIC ACID TO THE CAVITY OF THE UTERUS.—This is a simple step that any intelligent practitioner should be able to carry out, in those chronic cases of endometritis and subinvolution which must occasionally come under his care.

It is better to avoid any operative measure such as this immediately before or after a period. Also it is well in all operations on the uterus or ovaries to secure such mental rest and quiet as we can, and to subdue any morbid excitement of the nervous system generally. For this purpose, a dose of from fifteen to twenty grains of bromide of ammonia or bromide of potassium may be given for some nights before operating. The secretions should be seen to, and the rectum if necessary emptied by an enema on the morning of any operative interference.

The uterine canal has been previously dilated. The patient is in bed. The instruments we require are—a duck-bill speculum or short Barnes's bivalve (better the former) a few of Playfair's probes, an Atthill's trocar and canula, a uterine tractor and some absorbent cotton-wool. We have also the fuming nitric acid and some vaseline and glycerine at hand. It is right to have an assistant or nurse and this is indispensable when we use the duck-bill speculum.

The woman is placed in the semi-prone position, and brought well to the edge of the couch opposite a good light. Sims's speculum is introduced, and the uterus is steadied

and drawn well into view and command. A thin layer of cotton-wool has previously been rolled tightly round one of the platinum probes, to the extent of about two inches; the canula is introduced by the aid of the trocar into the uterine cavity, and the trocar is then withdrawn. The canula is easily retained in position with a forceps. The probe is now dipped lightly in the acid, and it is a good plan to roll it on the side of the slice so as to press out any superfluous acid. It is then carried through the canula to the fundus, and withdrawn with the canula so that the latter may protect the soft parts. The advantages of this convenient appliance of Dr. Lombe Atthill are manifest. The second of the uterine probes is ready charged with some vaseline, which it is well to pass after the acid has been

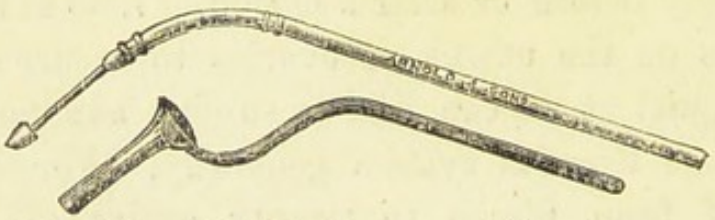


Fig. 52.—Atthill's Trocar and Canula.

applied to the fundus uteri. It may tend to prevent adhesions. I place in the vagina either some dry absorbent wool or a glycerine tampon. Before passing the probe armed with the acid into the uterus it is essential to completely arrest any bleeding that may have occurred. The same night the patient may take twenty grains of bromide of potassium or bromide of ammonia. She should remain in bed and have the vagina dressed each day; any discharge must be carefully wiped away, and a fresh tampon placed in the vagina.

Depletion of the Cervix Uteri.—For this purpose the cervix uteri is exposed with a good-sized Fergusson's speculum, the patient lying on her back. A Hall's lancet (a set of different sizes in a small case may be had) is taken, and some punctures, according to the quantity of blood we

require to take, are made in the cervix and the neighbourhood of the os uteri. A speculum slice is slipped under the lip of the speculum, and the blood is permitted to run into it. I believe rather in occasional depletion than in the abstraction of a large quantity of blood at one time. When we judge that sufficient has been drawn, it is easy to stop any further loss by a plug of dry wool pressed

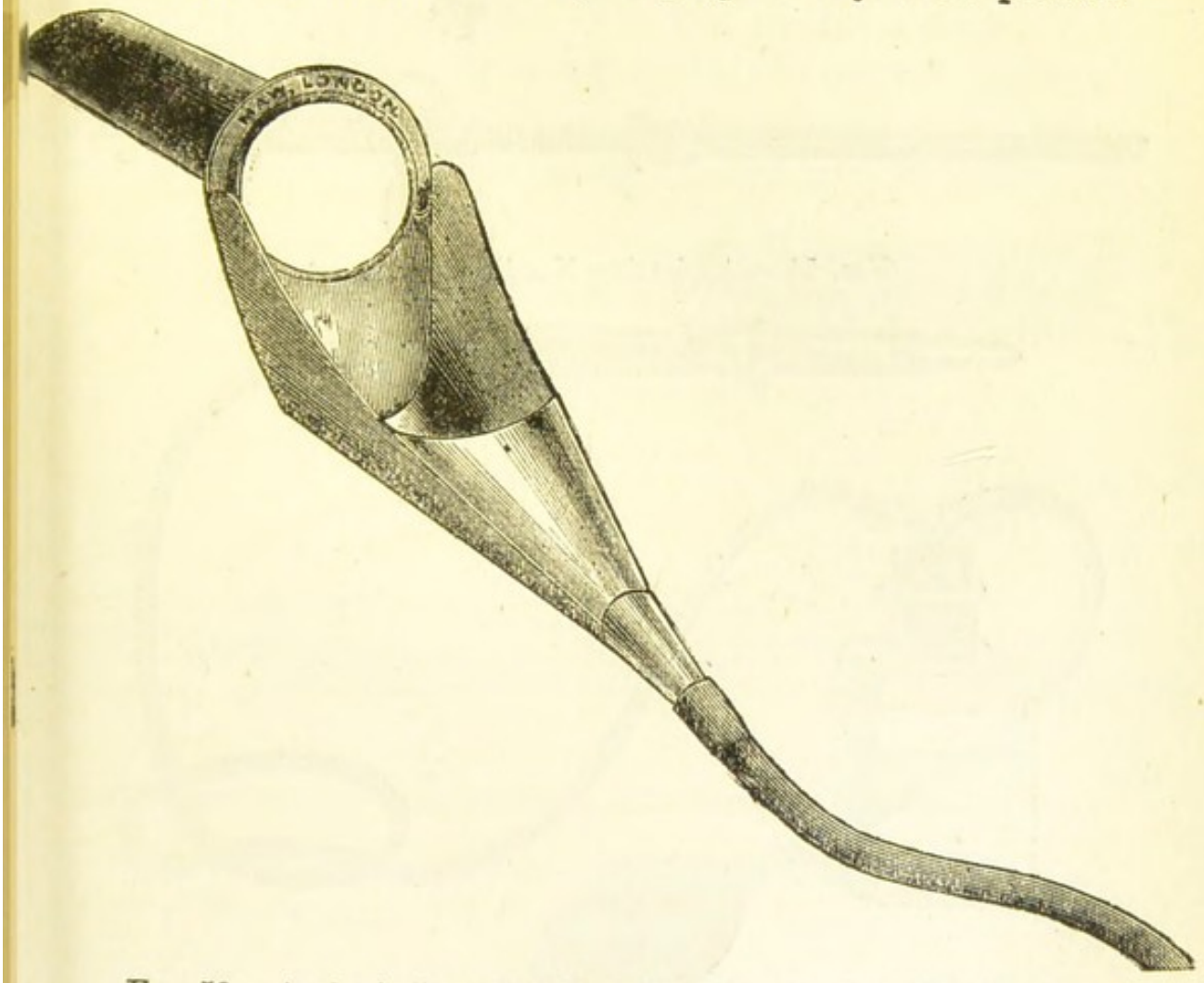


FIG. 53.—Author's Speculum Slice (Maw); useful in washing the cervix; in depletion, etc.

up through the speculum against the cervix uteri. A few such tampons will arrest the bleeding. I make it a rule of practice to apply a small dry plug of salicylic acid wool, or the same wool saturated with glycerine, after depletion. It is well to deplete, especially in cases of congestion and dysmenorrhœa, shortly before the advent of a period.

Aspiration.—When an aspirator is used for diagnostic or therapeutical purposes I prefer the simple one of Matthews as shown at page 46. Such an instrument I have been using for years, and have found it most convenient. The needle-

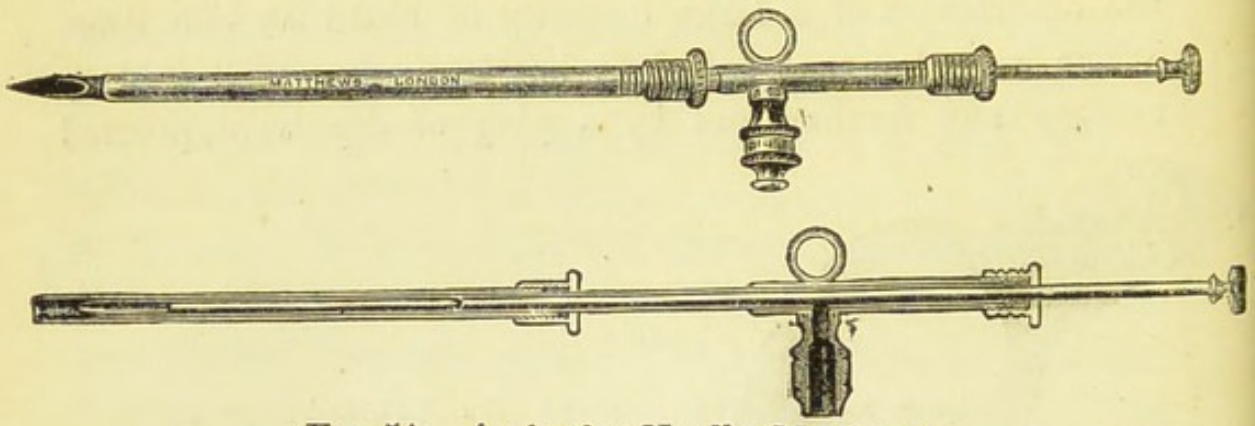


Fig. 54.—Aspirating Needle (Matthews).

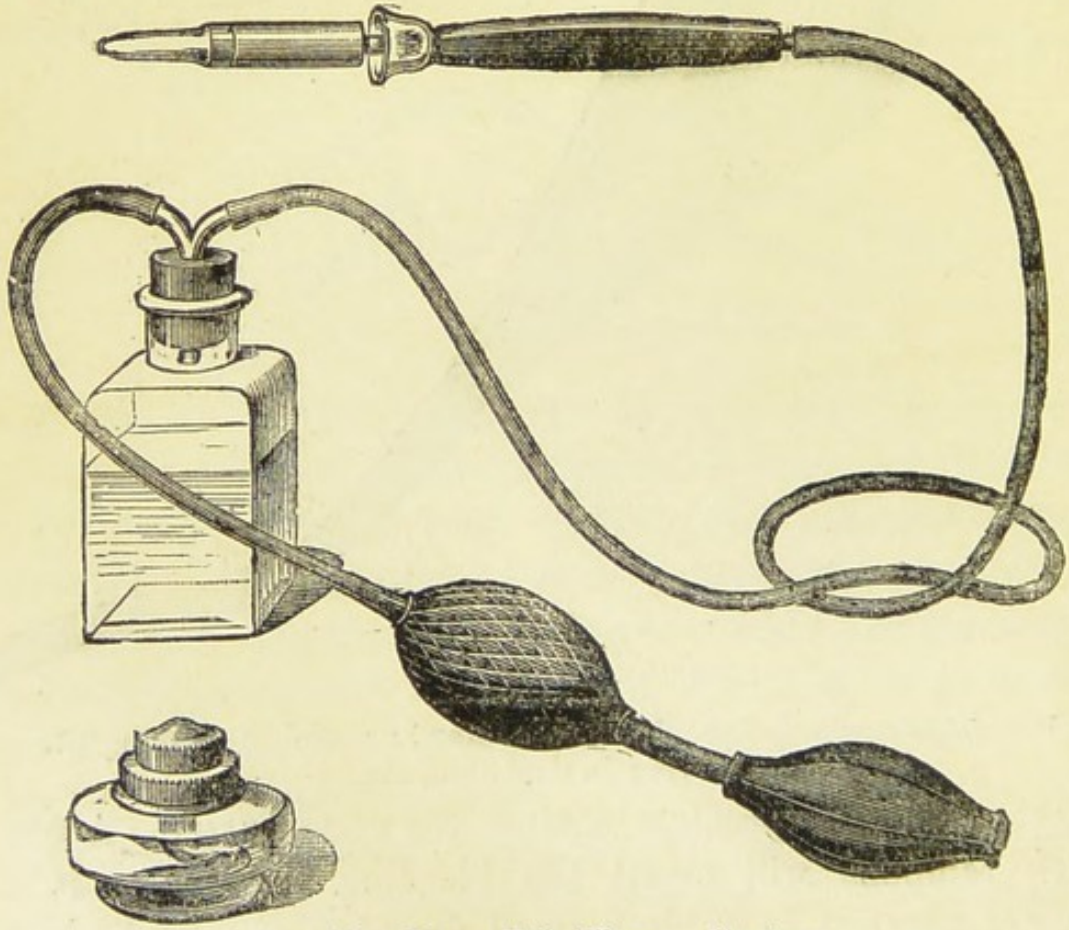


Fig. 55.—Paquelin's Thermo-Cautery.

points (Fig. 54) are protected after insertion by a canula, the piston also completely prevents the admission of air.

The Actual Cautery.—When for any purpose we desire to

employ the actual cautery, there is no appliance to surpass for general use the benzoline cautery of Paquelin. It is available also for cutting purposes, growths, small tumours, vascular excrescences, malignant disease of the uterus, perforation of a fibroid tumour of the uterus, hæmorrhoids. For very small tumours and for operation on the urethra, such an instrument as that used for small nasal and throat growths answers admirably. The fine platinum points can be had of any shape. By simply raising the cover of the battery the zinc plates are dipped in the bichromate solution, and the needle or knife is brought to any heat we desire.



FIG. 56.—Platinum Cautery.

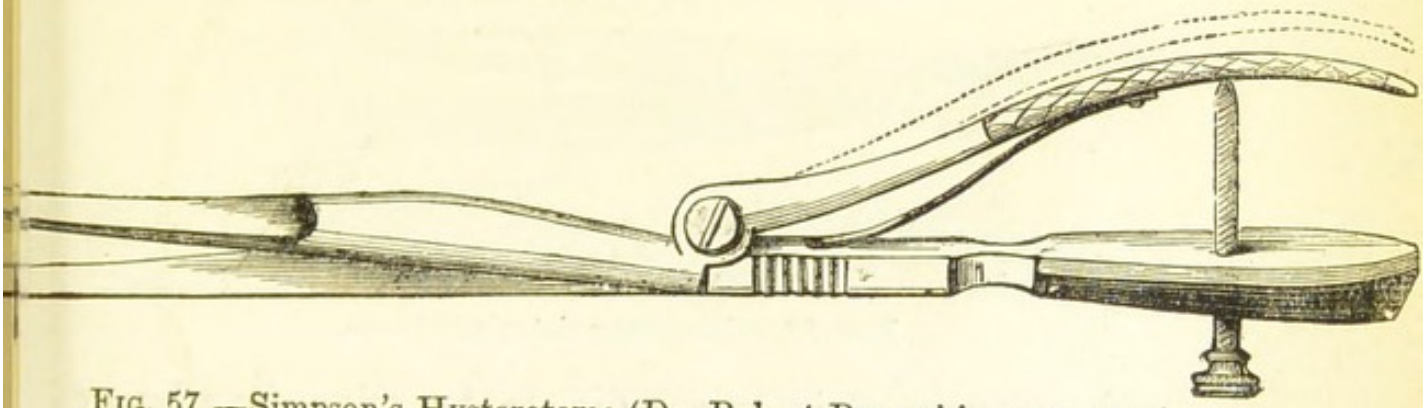


FIG. 57.—Simpson's Hysterotome (Dr. Robert Barnes' improvement).

Incision of the Cervix Uteri.—Simple incision of the lower part of the cervix has frequently to be resorted to, and is a step which must constantly fall to the lot of every practitioner. It is of advantage in numbers of cases of endo-cervicitis, when we have a small os externum in which we require room for intra-uterine medication; in cases of congestive and mechanical dysmenorrhœa associated with conical cervix and pin-hole orifice. The incision is best performed with a Kuchenmeister's scissors (Fig. 58), the intra-uterine blade of which is introduced to the desired

extent into the canal of the cervix, and, either bilaterally or through the posterior wall, the cervix is divided. Every practitioner must remember that even with this simple step it is necessary to adopt every precaution. It is wrong to take any risk. Therefore, before performing it the patient should be told that she must remain quiet, stay in bed for a day or so after the slight operation, and run no risk from cold or coitus.*

The patient should have a nightly dose of bromide of ammonia, commencing about five days after a period, and continued for a few nights. The rectum should be cleared before operation. The operator ought to have no contact

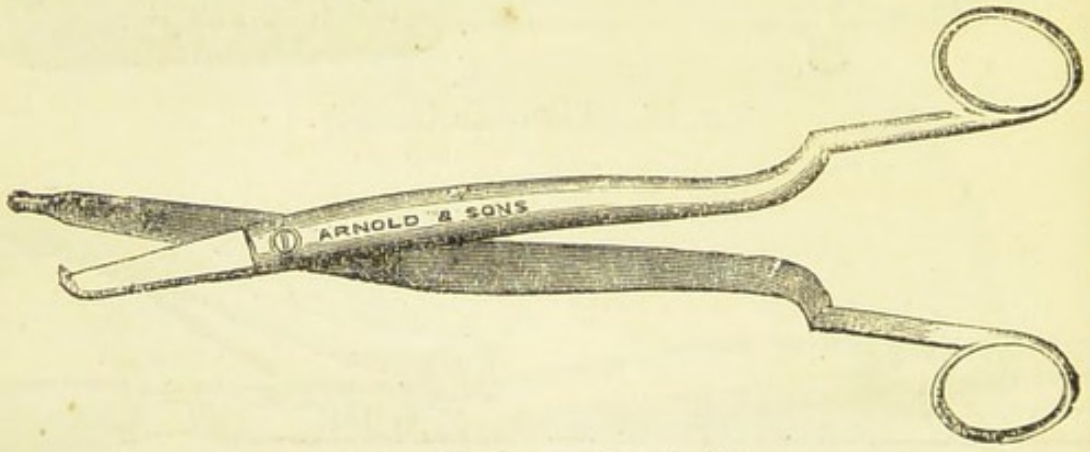


Fig. 58.—Kuchenmeister's Scissors.

with any case of infectious disease for some days beforehand. The position of Sims is chosen; the uterus is drawn well into view and held by a hook. The operator sees thoroughly how far he is cutting, and the extent of introduction of the blade. After division, bleeding is carefully arrested. I think it well, if possible, to avoid the use of any styptic, such as perchloride of iron. The bleeding is generally controlled by a few dry plugs, pushed well against the wound, if necessary, through a tubular speculum. I have found the styptic wool of Braun of use in ex-

* For further particulars of this operation and division of the internal os, see chapter on 'Uterine Displacements,' p. 158.

ceptional cases. A little pad of this wool is carried up and pressed into the incision, and allowed to remain for a time. After the bleeding has ceased, a plug of glycerine with some weak Condy's solution is left in the vagina. The vagina must be dressed once daily, and the wound kept open with a uterine probe, and a glass stem worn in the uterus.

Division of the Cervix Uteri and Internal Os.—In cases of sterility where dilatation has failed, or in severe endometritis with dysmenorrhœa, or in spasmodic dysmenorrhœa, division of the cervix uteri and internal os is indicated: this is a much more serious, as it is a more efficacious, step than division of the cervix alone. We are more likely to have hæmorrhage from the uterine vessels; we are closer to the peritoneum; there is a greater risk of metritis; and there is more immediate shock to the woman. Every precaution taken in the simpler operation is adopted in this. The instrument I prefer is a Sims' knife (Fig. 59).

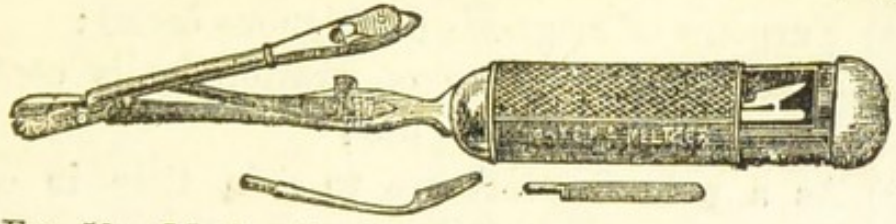


Fig. 59.—Marion Sims' Knife for division of the Cervix.

The blunt-pointed, straight, and curved blades are carried in the handle. They can be adjusted at any angle to the long axis of the handle. The preliminary steps are those taken for division of the cervix. The knife is passed through the cervix uteri and internal os. The incisions are carried laterally or posteriorly. The posterior incision, with the exsection, as suggested by Sims, of a small triangular portion of the neck of the uterus, has the great advantage that it places the axis of the patient's uterine canal in the most favourable position for conception. This is still more apparent if there be an anteflexion associated

with the sterility. Every precaution must be taken after excising the cervix against exertion, cold, coitus, or septic contagion. It is better to keep the canal open with the glass stem of Sims, or the intra-uterine soft stem of Greenhalgh.

Greenhalgh's metrotome is shown. But I have the same objection to it as to all metrotomes constructed on a similar principle; namely, that the action of the blade is not so directly under the control of the operator, nor the extent and direction of the incision made by it, as with such an instrument as the knife of Sims.

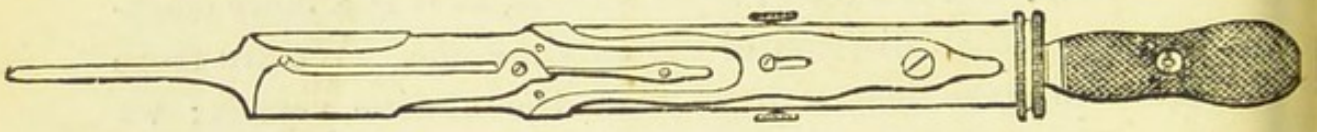


Fig. 60.—Greenhalgh's Metrotome.

Paracentesis Abdominis.—This is an operative measure frequently demanded in cases of ovarian cyst:

(*a*) Purposes of diagnosis (ambiguous cases);

(*b*) Where the operation of ovariotomy is contra-indicated to prolong life;

(*c*) As a palliative measure to gain time in certain cases, and afford temporary relief:

(*d*) In some cases where pregnancy complicates ovarian dropsy.

It is not a step to be undertaken lightly. It has to be remembered that simple tapping of an ovarian cyst has been frequently followed by death from shock, peritonitis, the escape of cyst contents, or of blood escaping into the peritoneal cavity, and septicæmia. Therefore it is well, in preparing to tap, that we should decide, beforehand, clearly with what object the step is taken. If our desire is to assist the diagnosis, then I prefer the aspirator and one of the larger needles (Fig. 55). The rod in the needle prevents

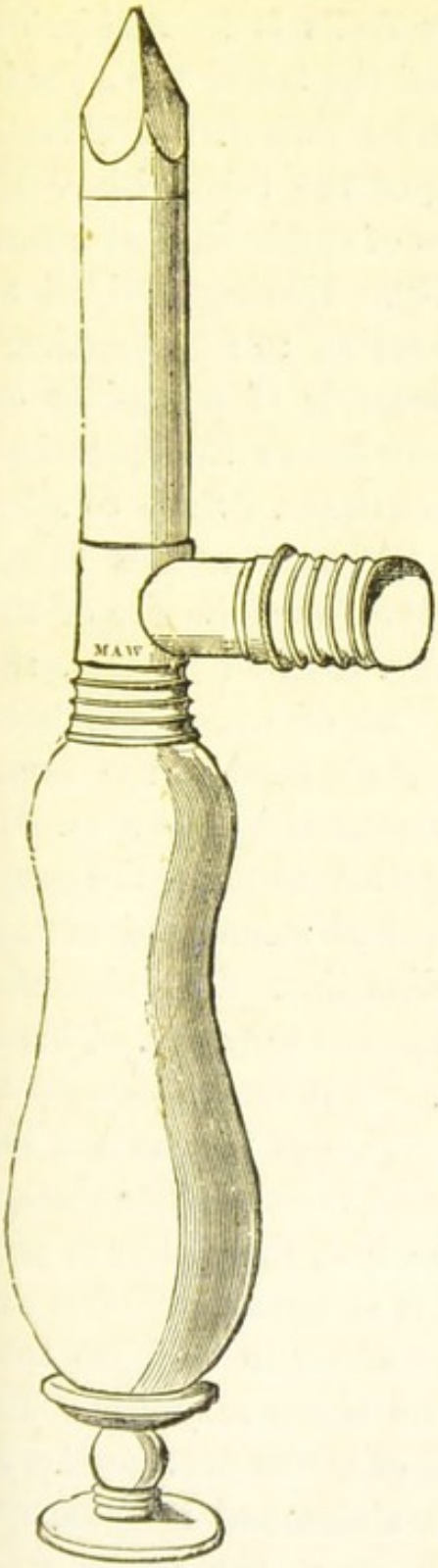


FIG. 61.—Wells' Trocar.

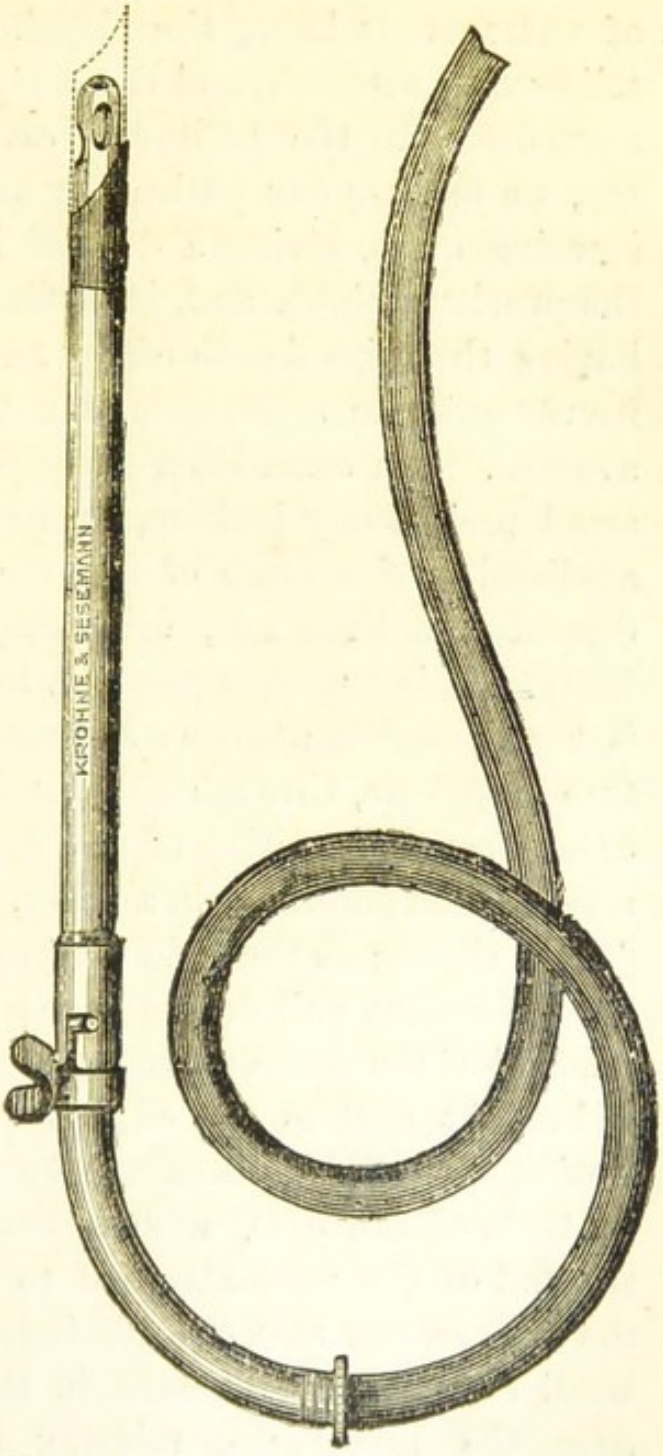


FIG. 62.—Guarded Trocar of Sir Spencer Wells.

the admission of air. Such a needle will possibly empty even a large cyst. If we have a doubt as to the nature of this fluid and its character, while, at the same time, we are anxious to

tap the cyst, the trocar of Spencer Wells is an admirable instrument. The larger the bore of the trocar the safer it is in all such cases; one of the most awkward accidents of paracentesis being the clogging of the tube with semi-solid cystic contents, and the escape of cystic fluid as a consequence into the peritoneal cavity. Having decided to tap, we prepare our patient by attention to the secretions, securing quiet, giving a dose of bromide of potassium on the previous night, and, immediately before the operation, having the urine drawn off by an assistant. Save to allay nervousness, an anæsthetic is not necessary, and is better avoided. But some ether-spray played over the site of the small preliminary incision, or, as Dr. Goodell advises, the application of a lump of ice, the end of which has been dipped in a little salt, will completely deaden the sensibility. It is better, if possible, to select the linea alba. It is the exception when we are compelled to make the puncture elsewhere, through the accident of some solid matter occupying the position of the median line. The abdomen may be first embraced in a roller, split at the sides. This is drawn tighter as the fluid escapes, and it serves to support the abdominal wall during the emptying of the sac and the removal of the pressure from the great vessels. The woman is brought well to the edge of the bed, the abdomen projecting over it. A bucket or two is at hand to receive the contents of the cyst, with a little water in each, so that the end of the tube attached to the trocar may dip below the surface, and thus the admission of air be prevented. A small incision is now made in the abdominal integument, over the linea alba, midway between the pubes and umbilicus, and the trocar is plunged into the cyst. If it be a polycyst, the trocar may be made to pierce the other cysts without withdrawal. When the fluid has ceased running, extra caution must be exercised in preventing the

admission of air, or any fluid likely to excite inflammation.

The wound is closed with a little dry antiseptic dressing. If the incision has been made too large, a silver-wire suture must be inserted; otherwise a dossil of lint and a few straps of adhesive plaister are sufficient. The prepared thymol pads will be found most convenient, to lay over the wound, after all such operations. The same care should be exercised to anticipate peritoneal inflammation after paracentesis as after the more formidable operations of abdominal section.

Vaginal Paracentesis.—In a limited number of cases it may be necessary to remove fluid from a cyst, ovarian or other, by the vagina. A small cyst may be localized in the pelvis occupying Douglas's space; in a multilocular cyst the solid part may be above, and the fluid cysts distend the lower portion of the tumour. For diagnostic purposes it is necessary to tap when we are uncertain of the nature of the tumour, whether cystic or otherwise. All the dangers of peritonitis and septicæmia are accentuated in vaginal tappings. It is better as a rule to use an aspirator. Otherwise a long curved rectal trocar, or better, the small guarded ovarian trocar of Spencer Wells, with a tube attached, which can pass into some fluid in a vessel at the side of the bed, must be chosen. The patient is best placed in the lithotomy position. The rectum and bladder (as in all operative procedures on the pelvic viscera) are first emptied. A careful and final exploration of the pelvic organs is made. The most prominent part of the tumour is felt, where we find the distinctest sense of fluctuation, and the trocar is guided to this spot by the middle and index fingers of the left hand. The bulging portion is now pierced with the trocar, which is then withdrawn, and the fluid permitted to flow off by the canula and tube. The less meddling after the withdrawal of the

fluid the better. The vagina may be washed out at intervals with some disinfectant solution, and an antiseptic tampon worn. The greatest care is necessary for several days, the patient being kept on her back and the pulse and temperature closely watched. The patient should have her bladder regularly relieved by the catheter, and it is well to keep the bowels quiet by opiates for a few days.

Puncturing a Pelvic Hæmatocele.—All that has been said of paracentesis 'per vaginam' applies to the relief of a pelvic hæmatocele by aspiration or tapping. But it is well to insist on the comparative danger of this step. Two facts must always be before the mind of the practitioner in deciding to puncture a peritoneal hæmatocele. First, we open into the peritoneal cavity, and in all forms of the accident we admit air into a fluid prone to decomposition, and hence we expose our patient to the increased risks of septicæmia. Secondly, it has to be seriously considered if results prove that we increase the chances of recovery. My individual experience of cases of pelvic hæmatocele would incline me rather to say, 'Let it alone, and treat the case.' (See 'Pelvic Hæmatocele.') But if we do decide to puncture or remove clots, either from the quantity of fluid in the tumour or the symptoms of septicæmia being imminent, we must determine our site of puncture according to the character of the swelling and the situation of its most prominent surface. The ordinary trocar for paracentesis of the over-distended bladder is selected, if the tumour be felt most prominent through the rectum. But, as a general rule, the posterior cul-de-sac of the vagina will be found the most suitable and most convenient place to puncture. The aspirator is the best instrument to use. If we are deceived in the sense of fluctuation, and find either a smaller quantity of fluid than we anticipated, or only softened clots—or that no fluid comes with the aspirator—

the question immediately arises, Should we lay open the mass and remove the clots? The decision must depend on the urgency of the local or general symptoms—great pelvic distress in the bladder and rectum on the one hand; symptoms of septicæmia on the other. It is impossible to lay down dogmatic rules for guidance in such cases. Each individual case has its special peculiarities and bearings. Influenced by our surgical instincts and experiences, we must do all that is possible to save our patient, avoiding unjustifiable or rash risk in the one direction, and equally culpable and timid trifling with life in the other. Should we resolve to open the mass, a long bistoury may be taken (if we have not Paquelin's galvanic knife to hand), and a little lint is wrapped round the blade, as a sheath, to within about one inch of the point. Such a knife as that figured, and which is used

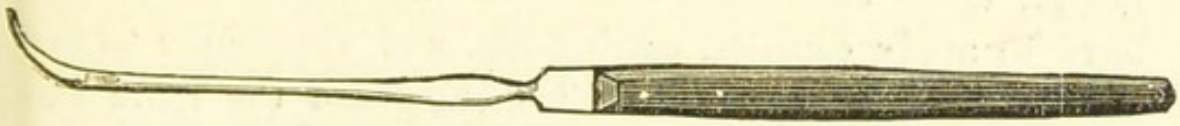


Fig. 63.—Bistoury.

for puncturing the larynx in œdema of that organ, will be found most suitable. The incision is carried through the posterior vaginal roof, and is of sufficient extent to admit of one or two fingers to examine for clots and remove these if necessary. It is needless to say that this step must be conducted with the strictest antiseptic precautions. I think it well to let the carbolic or eucalyptus-spray play about the bed and person of the patient before operating, and to wash out the vagina with a carbolic solution; and subsequently to the evacuation of the contents of the tumour, to use with a syringe a weak carbolic wash, through a piece of tubing attached to the nozzle of an ordinary syringe or the canula of the aspirator.

CHAPTER V.

MINOR OPERATIONS (*continued*).

INTRA-UTERINE MEDICATION.—In gynecological practice the treatment of uterine discharges by the topical application of agents to the uterine canal, both of cervix and body, is of everyday occurrence. In the commonly occurring troubles—subinvolution, endometritis—cervical and corporeal, granular conditions of the canal, after removal of polypi, those conditions consequent upon gonorrhœa—we have to apply caustics, astringents, and absorbents to the interior of the uterus. The following are the more important medicinal agents employed :

Nitric acid,
Carbolic acid,
Chromic acid (in solution),
Iodoform (in ointment),
Iodine (as tincture or with glycerine),
Iodine and carbolic acid,
Nitrate of silver (solid and in solution),
Sulphate of zinc (solid and in solution),
Perchloride of iron (in solution),
Chloro-acetic acid (in solution),
Chloride of zinc (in solution),
Mercury (in ointment)
Belladonna (in ointment),
Acetate of lead (in ointment),
Morphia (in ointment),

Tannin (as suppository),
Hazeline (liquid extract).

Intra-uterine medication is thus carried into practice either through the application of solid substances, the introduction of ointments, or the application and injection of liquids. These are applied to the cervix alone, or to the cavity of the body of the uterus above the cervix. A few general remarks on intra-uterine medication may not be amiss.

While many women are most insusceptible to the effects of intra-uterine applications, others, on the contrary, are very easily affected by such, and are peculiarly prone to suffer from uterine colic, symptoms of collapse, metritis, or peritonitis after their use. Intra-uterine medication, then, is always to be undertaken cautiously. Before resorting to it, the woman must be placed in the best possible position to undergo this form of treatment. This caution is all the more necessary in those applications which are made above the os internum. Certain general precautions are applicable to all cases.

Reduce any general congestion of the womb by internal remedies, baths and depletion, before commencing intra-uterine treatment. Use, previously, vaginal injections; have the patient's bowels attended to by the administration of some saline purgatives; rest in bed is essential where a powerful agent is carried beyond the isthmus uteri. In all cases of narrow and contracted os uteri, it is well to enlarge it by lateral incision before we apply any substance internally; and if we have to attack the cavity of the body, dilatation of the isthmus uteri should be secured before we proceed to treatment. In all cases of intra-uterine medication, when any caustic or astringent has been used, I believe it to be a safe practice to insert a pledget of absorbent or salicylic acid wool and glycerine into the

vagina. This is the more requisite, if the step be taken in the practitioner's house, and if the patient has to drive or walk any distance subsequently. No application should be made *immediately* before or after a menstrual period. The safest and most convenient means of applying any remedy to the canal of the uterus is by means of the uterine probe and cotton-wool. The probe can be curved to any shape, so as to pass readily into the uterus. It is well to have two probes by the surgeon; one is necessary to clean out the uterus. This is readily done by rolling a layer of cotton-wool round the end of the probe, and wiping out the uterus with it. At times a difficulty is experienced in removing the tenacious plug that fills the cervix in some cases of endometritis. By placing a little more wool on the probe, and rotating, we may detach this; but a small conical sponge, held in a miniature sponge-holder, will answer the purpose better than anything I know of.

When about to dress the uterus in the manner spoken of, it is well to have the patient in front of a good light on the obstetric couch, in one of the positions already described; perhaps the dorsal decubitus will be found generally the most convenient. I have already alluded to the mode of applying nitric acid to the fundus uteri. Here, as in many cases where we have any difficulty in reaching the cavity of the fundus, it is far better to use the duck-bill speculum and resort to Sims's semi-prone position. One tampon of wool is ready at hand, and some half-dozen small pieces are prepared to wipe the vaginal roof and surface of the uterus. The cervical canal is cleaned out and dried; the vaginal roof is cleared; the probe, armed with the cotton-wool saturated with the *solution*, is carried the desired length into the uterus. When the probe is withdrawn, the vaginal tampon is introduced.

Of the substances named, the strengths of any solution

selected must depend on the character of the case and the effect we desire to produce. The safest rule for practitioners to follow is to select a medium strength of any medicament, and never to begin with the maximum of that recommended. On the whole, it is better to be below than above even the medium strength of some solutions. The subjoined are the solutions that, as a rule, will be found safe and serviceable:

1. Nitric acid (applied as directed), pure.
2. Carbolic acid and glycerine two parts to one, and equal parts.
3. Carbolic acid, glycerine, and tincture of iodine: equal parts.
4. Carbolic acid and ext. hamamelis (liq.): equal parts.
5. Chromic acid: gr. xx.—xxx. ad ℥i.; or the same solution with equal parts of glycerine.
6. Iodine: gr. xxx.—℥i., spt. rectif.; or tincture, with equal parts of glycerine.
7. Nitrate of silver: gr. xx.—xxx. ad ℥i.
8. Perchloride of iron: gr. xx.—xxx. ad ℥i. (glycerine or water), with one part of No. 2 Solution.
9. Sulphate of zinc: gr. xxx. ad ℥i.; or with one part of No. 2 Solution.
10. Chloride of zinc: gr. xxx. ad ℥i.; or with one part of No. 2 Solution.

These ten solutions will be found to answer for most cases. It is a good plan in periodical dressings to vary the nature of the application. A good effect will often follow this change in the substance we apply.

Intra-uterine Injection. — Individually, I never use for intra-uterine medication injections into the cavity of the uterus. It may be prejudice and a dislike to run the unquestionable risks attendant upon their employment. I believe the less fluid we leave in the uterine cavity after

any topical application the better. This applies with double force to the undilated organ; metritis, peritonitis, collapse, colic, cellulitis, perimetritis are more likely to follow the injection of fluids. If they are used, it should be with such an instrument as the urethral injector of Sir Henry Thompson, and which I have for years successfully employed in gleety states of the male urethra. (Fig. 69.) Such an intra-uterine medicator I have had made for me by Messrs. Maw. It has a special uterine curve and answers for ointments as well as fluids. It carries a sponge, moistened with the solution, which is carried down to the apertures in the curve of the instrument, and thus a small quantity can be squeezed through these into the urethral or uterine canal. Withdrawing the sponge slightly, we can permit the reflux

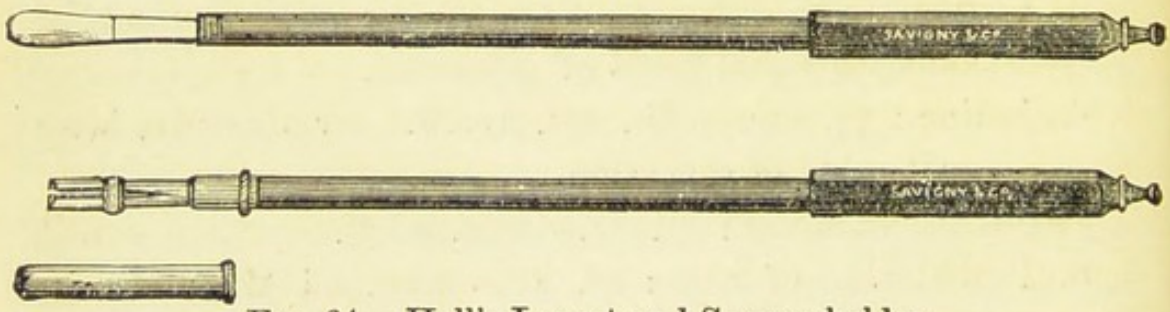


FIG. 64.—Hall's Lancet and Sponge-holder.

of any fluid that may remain, before removing the instrument. But the advantage we gain by this over the application with the uterine probe and saturated wool, I confess I am at a loss to see. If intra-uterine injections are used, we must be careful to—

(1) Exclude the possibility of any flexion of the canal;
(2) To secure free exit for any fluid by previous dilatation of the canal;
(3) To inject (the patient being in bed), within a week *after* the menstrual period, and take every possible precaution to anticipate and prevent *subsequent* inflammation;
(4) To be careful of the admission of air;

(5) Never to use nitrate of silver solution;

(6) It is well to wash out the uterus first with a little warm water, to ascertain the uterine sensitiveness.

Tincture of iodine, diluted; carbolic acid, with glycerine and water; perchloride of iron, in water; chromic acid, in solution; sulphate and chloride of zinc, in water—have all been used. The strengths should be weaker than those we employ of the same agents with the cotton-wool and probe.

A fairly safe injector to use is a small glass syringe which fits accurately to a hollow uterine sound with fine apertures at the point (Fig. 65). Whatever fluid is employed, ten drops should only be injected at the time. I repeat that in practice I believe intra-uterine injection to be a needlessly venturesome plan of treating endometritis.

Ointments.—Any ointment of such strength as we may desire can be applied to the cavity of the uterus. Thus we may use most serviceably carbolic acid, chromic acid, nitrate of silver, iodoform, nitrate and iodide of mercury, belladonna, bismuth, tannic acid, morphia, acetate of lead. We may use the uterine probe, or such an appliance as the ointment-positor of Dr. Robert Barnes (Fig. 66). The best basis for ointment is vaseline, or vaseline and paraffin

Solid Substances.—These are best used in the shape of the fused sticks sold for the purpose; as those of Dr. Braxton Hicks, which are made of sulphate of zinc. Nitrate of silver may be tried in the manner we employ it in affections of the eyelid, in combination with nitrate of potash, made into small moulds. Nitrate of silver may be readily fused in a little platinum crucible, and applied on the point of a uterine probe. Dr. Lombe Atthill speaks strongly in favour of intra-uterine application of the solid nitrate of silver in sub-involution of the womb, attended by severe menorrhagia; he regards it as 'both simple and safe.'

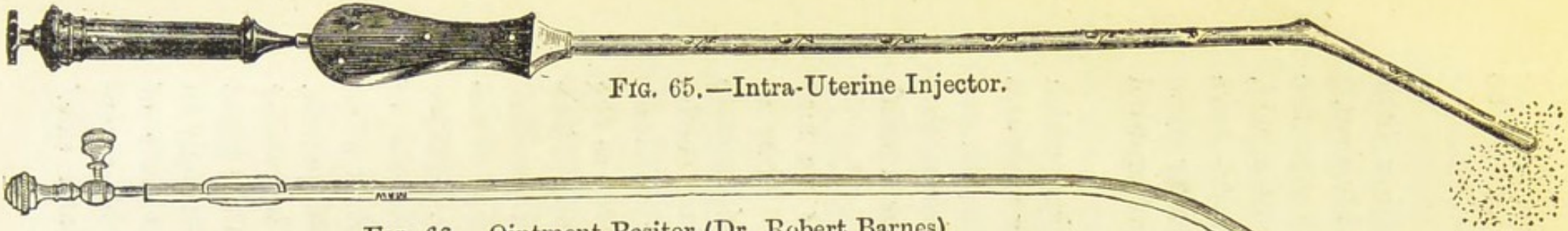


FIG. 65.—Intra-Uterine Injector.

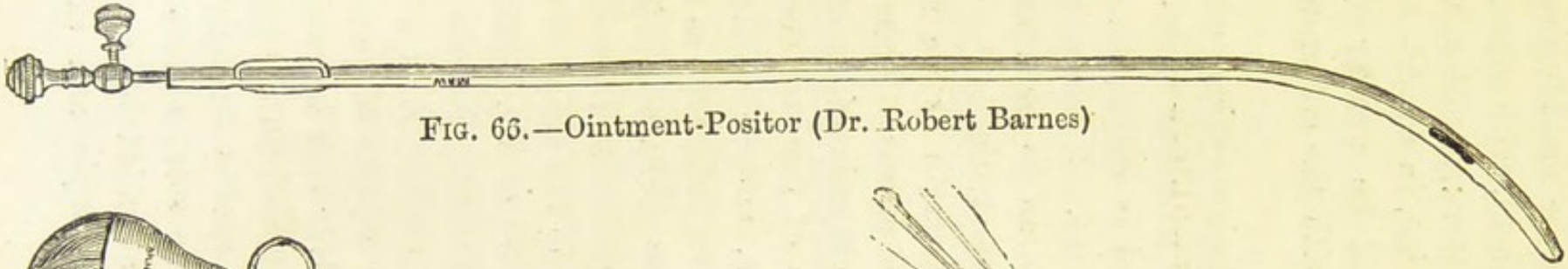


FIG. 66.—Ointment-Positor (Dr. Robert Barnes)

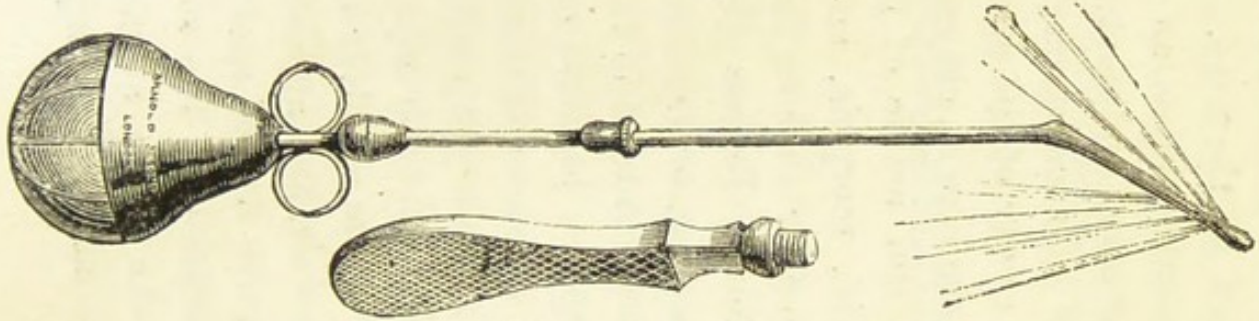


FIG. 67.—Intra-Uterine Injector.

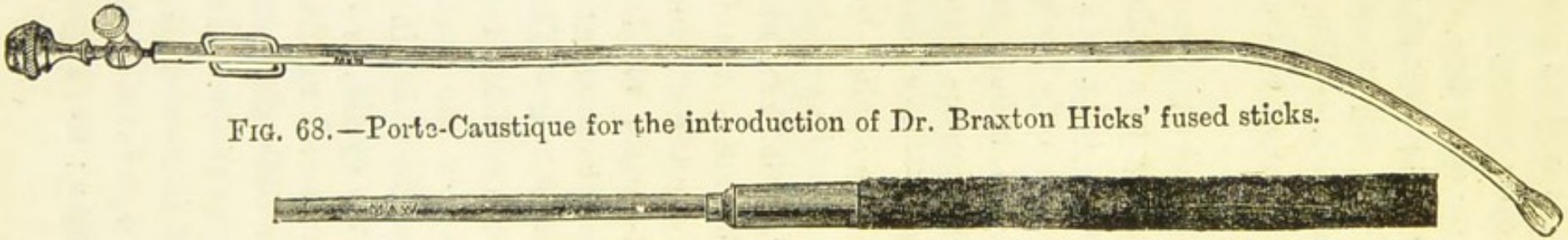


FIG. 68.—Porte-Caustique for the introduction of Dr. Braxton Hicks' fused sticks.

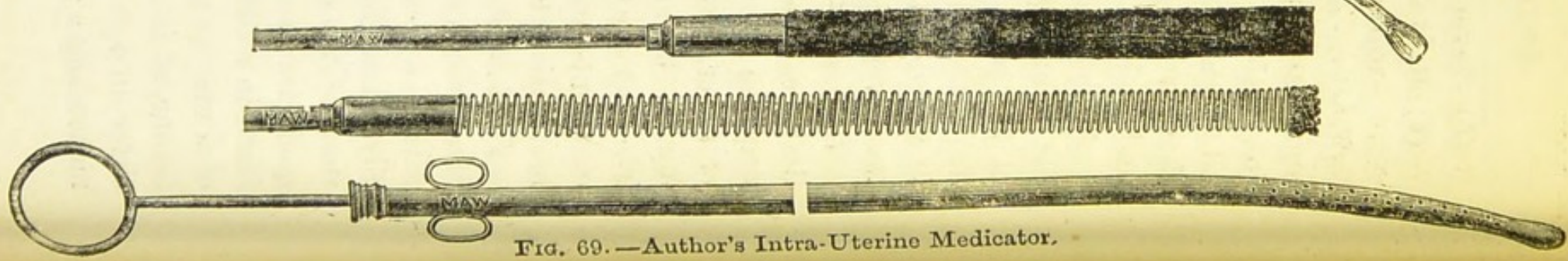


FIG. 69.—Author's Intra-Uterine Medicator.

These substances are applied through the porte-caustique (Fig. 68), a hollow uterine sound open at the end. The little caustic stick (Atthill, 'Diseases of Women,' fifth edition, p. 75) is inserted into this, and pushed home into the uterus by the stylet, which fits the tube accurately. But, as Dr. Atthill well insists, we must be careful, to withdraw the porte-caustique a little from the uterus when pushing in the stick, so as not to penetrate the uterine wall.



FIG. 70.—Small platinum crucible for nitrate of silver.

Intra-uterine Suppositories.—I have from time to time found most benefit from very small suppositories (which can be readily had to order of any good chemist) made of cacao-butter and glycerine containing belladonna (gr. ii. of extract), morphia (gr. $\frac{1}{4}$—$\frac{1}{2}$), carbolic acid (gr. ii.), iodoform (gr. iii.), tannic acid (gr. x.), and alum (gr. x.); these agents may be used either singly or in combination. They can be inserted through the porte-caustique. As a rule, however, I do not lean to introducing unctuous or greasy substances into the uterine cavity. I can only repeat that I believe the safest, the most generally convenient, and most efficacious means of treating abnormal states of the endometrium is by means of the uterine probe and cotton-wool.

Potassa Fusa, and Potassa-calce. — Both these caustics, the former being the more deliquescent and the most powerful, are employed in certain cases of granular cervix, chronic hyperplasia, and malignant disease of the uterus. They are most powerful in their action, and require to be applied with considerable caution. Their effects in causing contraction of the uterine tissue, or, if incautiously used, obliteration of the os, as also the danger to the surrounding

vaginal membrane, are to be remembered. They are thus applied. The patient is placed in the dorsal position, with the legs drawn up, and held apart. A large-sized Fergusson's speculum is introduced, and the cervix brought well within the tube. Some absorbent cotton-wool, saturated with vinegar, is packed round the lower part of the cervix, separating the rim of the speculum from the part to which the caustic has to be applied. The pencil of caustic is now taken in the holder, and used lightly or otherwise, according to the desired object. The more freely it is rubbed on, the greater the depth of tissue destroyed, and the larger the slough. A stream of vinegar and water is then directed on the part, the wool having been removed. A pledget of cotton-wool, soaked in equal parts of vinegar, glycerine, and water is now pushed up against the cervix, and allowed to remain in the vagina. Uterine pain after any form of medication is best and most speedily relieved by a subcutaneous injection of morphia, and a belladonna and morphia suppository introduced into the vagina. At night, to secure rest, the ordinary combination of gr. xx. of bromide of ammonia or potassium, with gr. xx. of chloral, is one of the best I know of.

CHAPTER VI.

DISORDERS OF MENSTRUATION.

OVULATION AND MENSTRUATION.—To comprehend any deviation from a normal and healthy act of nutrition of any organ, we must clearly understand the processes involved in the normal discharge of its functions and the anatomical and histological facts bearing on that act of nutrition, from its incipient stage to its completion. To no physiological process does this rule apply more closely than to the deviations commonly met with in the menstrual act of ovulation. Perhaps the most perfect example of a nutritive process, elaborated through the healthful interchange of function on the side of the circulating current on the one hand, and the tissues and the nerve elements on the other, is offered in the completion and perfection of the act of ovulation. There must be perfect relation of blood-supply, both in character and quantity, and healthful control of nervous influence, not only on the part of the nerves distributed to the various tissues involved—arterial, muscular, cellular—but on that of the central nervous system. Nowhere is this made more manifest than in the influence exerted on the ovary and uterus during mental states, or reflex disturbances, or shocks, which show their immediate effects in arrested and perverted menstruation. It is outside the scope of this work, as indeed it is not rightly within its province, to enter into a detailed description of the act of ovulation and the associated process of

menstruation. This is more distinctly a portion of the physiological course of the student, and will be found dealt with in a more perfect manner than I could possibly hope to do in a work of this nature. It must suffice to remind the reader of a few facts, connected with the act of ovulation, which bear on some of the clinical phenomena of menstruation.

At a certain period of female life, varying, generally, from the twelfth year to the seventeenth, and known as that of puberty, a sanguineous excretion occurs from the uterus. This flow of blood is the outward and visible sign of the completion of the ovarian function of ovulation, or the full development of a Graäfian follicle, its rupture, and the escape of the ovum. Attendant on the first appearance of this catamenial flow, changes appear in the mental and physical nature of the girl: it is the springtime of her existence; and her whole system participates in the budding forth of her sexual life. There is hyperæmia of her sexual and mammary organs. Local congestions may occur in the ovaries, uterus and rectum; remote in other organs, as the brain, heart, and lungs; or reflex disturbances, having their origin in the ovaries, and the irritation of the ovarian nerves. And this recurring hyperæmia of ovary and uterus, with the associated vascular and nervous disturbances, continues for some thirty or forty years of the woman's life—her summer. And now we approach the critical autumn-time, when this fertilizing process begins to wane, and gradually ceases altogether—the period of the menopause, from forty-five to fifty, or thereabouts, when again we find her subject to local and remote congestions, cerebral affections, vicarious hæmorrhages from various organs, cardiac complications; at the same time occur exaggerated reflex disturbances and nervous 'discharging lesions.' These accompany that 'change of life' during which are

developed those traits of womanhood which stamp with peculiar and characteristic features the period antecedent to the winter of old age. It is not, however, to the change in the uterine mucous membrane, and the periodical hyperæmia of the uterine tissues with the consequent flow of blood, that we are to look for an explanation of these phases and phenomena. It is to the antecedent act of ovulation. True, a woman may menstruate (in so far as a mere periodical flow is concerned) without ovaries, but then it is most probably the mere perpetuation of a habit. As a physiological act it has lost its prime significance. It is on the ovaries rather than on the uterus that the gynecologist has to concentrate his attention, in investigating the normal, and in treating the abnormal menstrual molimen. We do not find any accurate explanation of many of the phenomena of menstrual life. There is a something in these not to be explained by any anatomical or physiological facts connected with ovulation. The effects of its mysterious influence on the entire being of the woman may not be measured by any descriptive language. The explanation is not in the swollen and sensitive ovary, or in any changes that occur in the parenchyma, in the maturation and rupture of the Graäfian follicle, or in the accompanying congestion of the Fallopian tube, or in the swelling proliferation and disintegration of the uterine mucous membrane.

This strange coincidence, of a mental and physical state being closely dependent upon the healthful discharge of the function of a single organ, is best recognised when we watch the consequences of perverted action, or of any arrest or suppression of the ovarian function. 'The *essential thing*,' as Schroeder says, '*is the discharge of the ovum*;' the escape of blood from the mucous membrane is an accessory occurrence, which is, perhaps, only the indication of the retrograde metamorphosis of that membrane. Conception may

occur while the external evidence of ovulation is absent; as we have seen that the menstrual flow may periodically appear when the ovaries are removed. The congestion of the ovaries and other genital organs may take place with the discharge of the ovum, and still there may be no laceration of the uterine vessels, and the usual escape of the disintegrated mucous membrane may not follow. From these few brief remarks we may infer how important to the health and well-being of the woman is the due performance of this function on the part of the ovary. And though we may not regard the uterine changes and flow as of the same essential significance, yet, remembering the hyperæmic condition of, and the local determination of blood to, all the genital organs at the time of menstruation, we can comprehend how serious must be the consequences of a partial or complete suppression of this escape of blood from the uterus, and the arrest of the normal process of disintegration and exfoliation of the uterine mucous membrane, and the resulting retention in the blood of the abnormal elements of excretion. This brings us to the consideration of the simplest departure from the normal act, viz., amenorrhœa.

Ovulation and Abnormal Menstruation.—To the student a short tabular statement of abnormal menstrual states may be acceptable.

Menstruation occurs from puberty to the age of forty-five or fifty, every twenty-eight days or at a longer interval (quite compatible with health). The discharge lasts from three to seven days, or longer; consists of blood and disintegrated débris of uterine mucous membrane, the quantity of which varies with the duration of the flow. It is influenced by climate, temperament, coitus, habits and rank of life, temperature, blood-states (as the exanthemata, phthisis, Bright's disease, chlorosis, anæmia, leukæmia), mental circumstances (as depression, shock, hysterical con-

dition, the effects on the mind of illicit intercourse, seduction); local disorders of the genital organs and rectum (as fibroid developments, uterine version and flexion, hyperplastic states of the uterus); morbid growth of, or abnormalities in the development and position of the ovaries; any congenital or acquired stenosis or atresic condition of the genital canal from the Fallopian fimbriated orifice to the vulva.

Amenorrhœa: 1. Primary, frequently persistent (emansio mensium).

2. Secondary, usually temporary (suppressio mensium).

Dysmenorrhœa (Uterine—Ovarian) :*

(*a*) Congestive and inflammatory.

(*b*) Neuralgic and hysterical.

(*c*) Obstructive.

(*d*) Membranous.

(*e*) Ovarian (Dysoötocia).

Menorrhagia: 1. Catamenial excess (either simple excess in the normal physiological and pathological process, or the result of a morbid condition of the ovaries, uterus, or some other organ).

2. Climacteric; occurring at the menopause.

Metrorrhagia: Abnormal flow of blood during the intervals between the menstrual acts.

Vicarious (diverted): pneumonic (hæmoptosis); nasal (epistaxis); gastric (hæmatemesis); cutaneous; renal; cerebral and retinal; rectal (hæmorrhoidal).

Amenorrhœa.

Causation.—1. Removable causes (excluding pregnancy), many of those cited above as influencing ovulation and menstruation.

* See Appendix.

2. Irremovable—absence, or congenital malformation and arrest of development, of the ovaries, Fallopian tubes, or uterus; acquired disease of the ovaries, or uterus.

We find that the commonly occurring causes associated with a diminution or temporary absence of the menstrual flow are:

(*a*) anæmia and chlorosis,

(*b*) plethora and plethoric states,

(*c*) some accidental influence operating on the woman, as mental shock, fright, cold, sea-bathing—all these repressing causes have a more decided effect if they occur at or about the time of a menstrual epoch; acute diseases and chronic wasting diseases; the exanthemata,

(*d*) congenital defects.

Differential Diagnosis from Pregnancy.—As it is the rule, though there are occasional exceptions, that the menstrual flow ceases during the pregnant state, it is always our duty, in any suspicious case, most carefully to exclude any chance of this condition being the source of the trouble. The student of midwifery has already studied all the signs and symptoms of the pregnant state. He is aware how difficult it is, before the uterus rises above the pubes, to speak with any degree of confidence of the existence of pregnancy. On no question must we guard our expressions or our suspicions more than on this; not only in those cases in which the possibility of conception is for any purpose concealed or denied, but also in those in which the desire of the woman is parent of the belief, and she assumes that she is pregnant. It requires considerable tact to avoid committing one's self to an opinion

until such a period of pregnancy has arrived that we should be able to speak with confidence.

I do not enter fully into the differential diagnosis of pregnancy; this is exhaustively done in every treatise on midwifery. This table of the most important proofs, divided over three periods, may be of service:

FIRST PERIOD.	SECOND PERIOD.	THIRD PERIOD.
Cessation of the menses; reflex and sympathetic disturbances; changes in the breasts; morning sickness; enlargement of the uterus and change in position, with commencing change in the os uteri and cervix; vaginal signs in alteration of colour and increase of natural secretion.	Progressive increase in the size of the uterus, which continues until the close of pregnancy, with characteristic alterations in the abdomen; further changes in the breasts (areolæ —secretion); fœtal projections and heart-sounds; ballottement; placental souffle.	Uterine contractions well felt; more characteristic changes in os uteri and cervix; all the signs of pregnancy becoming more manifest.

From the fifth to the sixth month, in the great majority of cases, we can speak with confidence of the uterine enlargement being due to pregnancy. Yet remembering how often we meet with complications, such as fibroid tumours, ovarian cysts, ascites, flatulent distension, hydraminos, we had better keep always before us the fact that the only absolute proof of pregnancy and infallible test is the auscultatory one of the fœtal heart-sounds. In all the others a man may be deceived. This must be so, or we should not have the fact occurring of the greatest gynecologists, past and present, committing pardonable errors in opening the abdomen to operate for a tumour, ovarian or uterine, and finding a pregnant uterus. Nor

would we find the awkward mistake made in the opposite direction—woman, nurse, and practitioner awaiting the discovery of a phantom pregnancy, and flatulent accumulation, or relief from the operation of paracentesis abdominis for ascites.

Anæmic and Chlorotic states are easily recognised in the pale conjunctiva, the colourless lip and gum, the white complexion, and in marked leukæmia, the wax-like look of the skin, the anæmic first sound and functional irregularities of the heart, the cervical jugular bruit, the pale retina, the puffy state of the face and eyelids, and the accompanying group of neuralgic or hysterical symptoms that are constantly associated with these physical signs. Most marked of these are headache, loss of appetite, or capricious tastes in diet, lassitude, dislike for outdoor exercise, sleeplessness, neuralgic pains in different places, attacks of syncope, a rather characteristic pain referred to the left side of the chest beneath the region of the heart. It is in such a general depraved state of the system that we are often consulted. The watery blood, with red corpuscles diminished in quantity and altered in their physical characters, does not respond to the demand of ovary and uterus; the vitality and nutrition of both organs are lowered. The act of ovulation gradually ceases, or may not occur at the proper time, is abortive and irregular; while the menstrual discharge is lessened, changed, or absent.

Plethora.—Just the reverse of this condition is met with in *the plethoric* and full-blooded. Here there is a hyperæmic condition of all the sexual organs. They participate in the general state of plethora of the entire system, and the other vital organs. The normal balance of blood-supply and nutritive growth and development is lost; congestion of both ovaries and uterus results. The act of ovulation is either prevented or arrested through this undue blood-

supply; or it becomes at first irregular in time of occurrence, and in the quantity of the menstrual secretion, and, gradually interrupted, it finally ceases. This type of case is easily recognised. The ready flush, the high complexion, the throbbing vessels, the strong and full pulse, with accompanying symptoms of headache, functional heart palpitations, proofs of congestion elsewhere in the lung, kidney, or retina, are a few of the signs that tell us of the cause of the amenorrhœa.

Accidental Influences.—We find these in injudicious habits of dress, diet, exercise; in some mental shock; in the sequelæ of various acute diseases which have lowered the vitality of the system, or interfered at the time of its occurrence with the menstrual function. If we go carefully into the history of any case when first we are consulted, we can generally place our finger on the fault which has, directly or indirectly, led up to the cessation of the menstrual flow, or its altered character. Indeed, in a large number of cases that come before us, it is to a depraved mental condition we must look for the primary source of the evil.

Congenital Defects.—When we are consulted by parents, or by the patient herself, for delayed menstruation, before making any internal examination it is well to enter carefully into the previous history. We can ascertain if there has been an indication at any time of an effort at ovulation—recurrent pains at special times in the back or sides, or an attempt at periodical discharge of any kind:—if there is a general arrest in development in the direction of womanhood, both physical and mental; if we can trace to any accidental cause the arrest or suppression of the flow. If not, we must then keep before our mind the probability of congenital defects in ovaries, uterus, and vagina. After such an exhaustive examination, and if ordinary remedies fail to produce any effect, a careful digital examination, in the

presence of the patient's friend or nurse may be demanded; by its help we may decide the question of congenital defect. Such an early examination is more especially demanded in young married women, and in unmarried girls more advanced in years, especially if we have a history of old attacks of vaginitis, parametritis, uterine displacements, peritonitis, or more urgent symptoms indicative of retained menstrual flow.

Indications for Treatment.—These, once we decide the cause of the amenorrhœa, are clear. In anæmia—to restore, in the first instance, to the sexual organs their normal blood-supply, and correct the constitutional vice disposing to this morbid state; and secondly, to direct to these organs such local therapeutic means as are calculated to induce or re-establish the natural performance of their functions. We must correct those habits that have a deleterious influence on the general health, and the sexual organs, in particular.

Questions of clothing, diet, exercise, mode of living, and occupations, have all to be carefully gone into. The use of warm clothing; the wearing of light flannel next the skin, (vest and drawers); avoidance of those modern devices for strangling the abdominal and pelvic viscera; the securing of due warmth in the extremities, hands and feet; proper support for the under-clothing — all must be insisted on. So it is a good plan for the practitioner to give each patient her individual dietary-table systematically arranged, omitting all those articles of food which are calculated to cause or sustain dyspeptic states, and which are in themselves likely to deprave the blood. Sufficient quantity of animal food, taken, if necessary, in any of the forms of digestible and concentrated foods made by such firms as Brand, and Savory and Moore; poultry, game, fish, and milk, given according to the digestive powers

of the patient; moderation in alcoholic stimulants, avoiding over-reliance on them, or their careless recommendation, or a fanatical denial of their therapeutic value; some *good* claret (such as Chateau La Rose, Margaux, Lafite), Carlowitz, Red Burgundy, St. Raphael wine;* the combination 'beef-iron wine' of Messrs. Burroughs; pepsine wine; some of the numerous malt preparations, as malt extract, and ferrated maltine; a little old brandy and milk taken a few times daily, or the much-abused but often most valuable of wines, genuine port—all have their special virtues, and will assist our treatment according to the constitutional features of the case. Attention to the times of meals and the intervals between, is of equal importance to their character. Speaking generally, light and digestible meals, not taken at long intervals, and never late at night, will be found most judicious. So we must correct, when possible, those pursuits and their effects which tend to corrupt the blood. Overcrowding in sleeping apartments, heated rooms, ill-ventilated sitting and bedrooms, prolonged sedentary employment, much stooping or standing, excessive study and long school-hours, want of suitable outdoor exercise and amusement, too violent exercise and muscular tire, have to be firmly condemned. How many of the future uterine troubles of adult and married life are engendered by the routine, monotony, and over-work of our modern boarding-school life, when the mother's watchful eye is absent, only those who are so often consulted for the results of both know. If parents were oftener alive to the danger, they might be more careful in the selection of the temporary home, on the domestic management and control of which so much of their child's future happiness depends.

Nor must we omit due attention to the cutaneous secre-

* The Australian wines, Auldana and Emu brands, are excellent substitutes.

tion—proper bathing of the entire body at a medium temperature (water 60° to 70° or 80°) if cold be not well borne; sea-bathing if it agree, and that a healthful reaction occurs after it. Proper friction is essential, especially of the lower part of the back and the abdomen, after the bath. Dr. Atthill has suggested a plan which for years I have followed with success. The patient is directed, before she goes to bed, to sit, protected from cold, in a small bath of water at a temperature of from 60° to 70°. The feet are either placed in hot flannel, or in a small foot-can of hot water. After the bath the hips and lower part of the abdomen are well rubbed with a Turkish towel, and then the patient goes immediately to bed. Such spas as those of Kissingen, Kreuznach, Vichy, Schwalbach, Ems, Spa, may be resorted to.* A winter at St. Moritz, or Davoz Platz, or in the Italian Riviera, if any phthisical tendencies are present, may be necessary. A trip to the south of France, a short stay in the Tyrol or Switzerland, or at some of our own equally efficacious health-resorts, such as Brighton, St. Leonards, Hastings, Torquay, Bournemouth; and in summer, a few months in Scotland, the English Lake district, Wales; or at such watering-places as Southport, and Blackpool in Lancashire, will often, if assisted by proper treatment and regimen, restore the health and arrested functions, when nothing will affect any change in the impure atmosphere of the crowded city. I briefly tabulate the most important therapeutical means for the treatment of amenorrhœa generally, reserving a few practical observations on some of the more useful of these drugs.

Iron (and its salts).	Chalybeates generally.
Arsenic.	Separately or in combination.
Quinine.	
Nux vomica and strychnine.	
Ergot and ergotine.	

* See Chapter on 'Health Resorts.'

Aloes. } In combination (as Pil. aloes c̄ myrrha) with
Myrrh. } iron.
Saffron.
Cannabis indica—Cannabin.
Apiol.
Borax.

Other Therapeutic Means:

Uterine sound.
Galvanism.
Warm hip and foot baths.
Friction to spine.
Leeches to anus and inside of thighs.
Fomentation to the breasts.
Stimulating enemata.

Iron.—Before administering any form of iron, it is well to prepare the system for its administration. This is best done by the exhibition of some gentle saline aperient for a few days, such as Hunyadi Janos water, or any of the effervescing saline preparations in ordinary use. It is well also to act on the liver by means of a mild laxative pill. We may combine a small quantity of grey powder with some vegetable cholagogue, as euonymin or iridin. For a few days before commencing the iron, the use of an alkaline mixture, of bicarbonate of potash, or Mindererus' spirit (liquor ammoniæ acetatis) with spiritus etheris nitrosi —the simplest and best saline of all—may be taken occasionally. The diet should be regulated, heavy meals should be avoided, and farinaceous food, with milk, principally taken. Sufficient time should be permitted to elapse after meals before the iron is taken; it should not be given while fasting. The particular preparation selected must depend on the features of the case, or the tolerance shown for the exhibition of iron, and the exact effect we

are anxious to produce. The preparations I find most efficacious, in a large number of cases, are reduced iron, which can be given in pill or powder, alone or in combination; dried sulphate of iron, which can be combined with quinine, arsenic, or nux vomica in pills; the dialyzed solution of iron; the compound iron mixture; muriated tincture of iron; the solution of the chloroxide of iron; the compound forms, ammonio-citrate and potassio-tartrate; the effervescing varieties and these in combination with quinine; bromide of iron, when we wish iron in conjunction with the bromides, is useful. I have found such preparations as those of Blanchard (pills) and the perles of Tisey borne when other forms of iron were not tolerated. The phosphatic preparations (syrups of the hypophosphites of iron and quinine), Fellow's, Dusart's, and Easton's syrups, or any of these combinations, may be assisted by chalybeate waters and such preparations as the ferrated maltine and beef-iron wine.

Arsenic.—Through its action on chronic uterine inflammatory states, is perhaps the most useful medicine we possess. The arsenious acid ($\frac{1}{40}$—$\frac{1}{50}$ of a grain) may be well administered in pill, in conjunction with either quinine or iron, taken three times daily after food. Fowler's solution, as a liquid preparation and capable of combination, answers all our purposes. The peculiar susceptibility of some individuals to the effects of arsenic, as seen in irritability of the stomach, erythematous attacks of the skin, and inflammatory conjunctival states, is not to be forgotten when we are giving it for the first time to a patient. *Quinine* we may combine in administration with any medicine indicated for amenorrhœa. It may be given either with arsenic or iron, aloes and myrrh, ergotine, nux vomica in the form of pill, with various salts of iron; or the vegetable infusions, and any of the many elegant forms in which quinine is now prepared. Messrs.

Corbyn, Stacey and Co. have prepared for me three pleasant and efficacious effervescing preparations, salicylate of quinine, salicylate of quinine and caffein, salicylate of quinine and iron, which can be prescribed in combination. The muriate of quinine, when we wish, can be conveniently given with the muriated tincture or solution of the perchloride of iron. *Nux vomica, or strychnine,* next to quinine, is perhaps the most valuable vegetable tonic we possess; more especially is it of service in the atonic and debilitated conditions associated with suppressed menstruation. It may be given in the form of extract, with either quinine, arsenic, or iron, in $\frac{1}{4}$-grain doses, three times daily, after meals, or at times combined with ergotine. It is particularly indicated in those sluggish states of the bowels that we so frequently find complicating amenorrhœa. Here it may be added to an aloetic pill. But the most reliable mode of administering this drug is as the liquor strychniæ of the pharmacopœia. It is better to prescribe a standard quantity, as ʒii. of the liquor (gr. i.), and to have this contained in a given quantity of water, ℥xvi.—℥xx.; thus the ordinary half-ounce dose contains $\frac{1}{32}$ to $\frac{1}{40}$ of a grain. With glycerine and the dialyzed preparation of iron it forms an excellent mixture, to which the tincture of quinine may, if we so desire, be added. *Ergotine,* as an emmenagogue, is a useful adjunct to any of these medicines. It can be given ($\frac{1}{2}$-gr.–gr. i. doses) with quinine and nux vomica. Ergot and most other pure therapeutic agents act mostly as emmenagogues. Borax I have occasionally found service from. It is best given by itself in the form of powder. Apiol granules are of use, especially if there is dysmenorrhœa, and have a similar action to ergot. Of the other therapeutic means, their mere enumeration is sufficient to indicate the object in employing each. I shall therefore only make a passing allusion to them. Before we take up *the uterine sound* to induce a menstrual act, we

must have positively assured ourselves of the absence of pregnancy. Seeing the ill uses to which the sound is put in inducing abortion, I confess that I do not like the idea of suggesting its habitual or even occasional employment as a

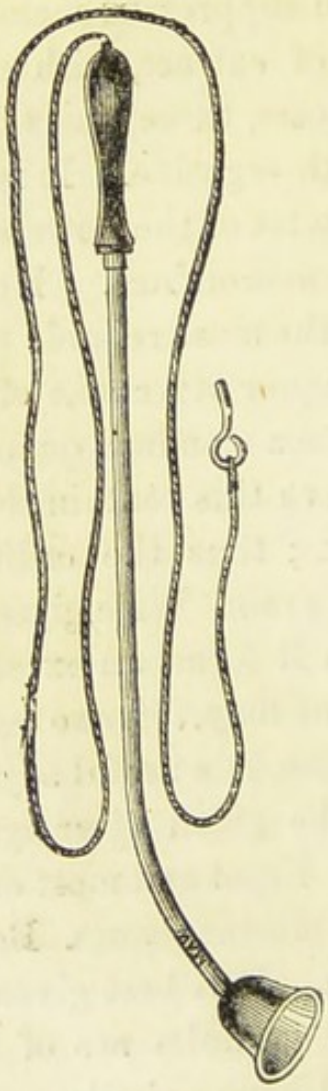


FIG. 71—Bell-shaped Rheophore.

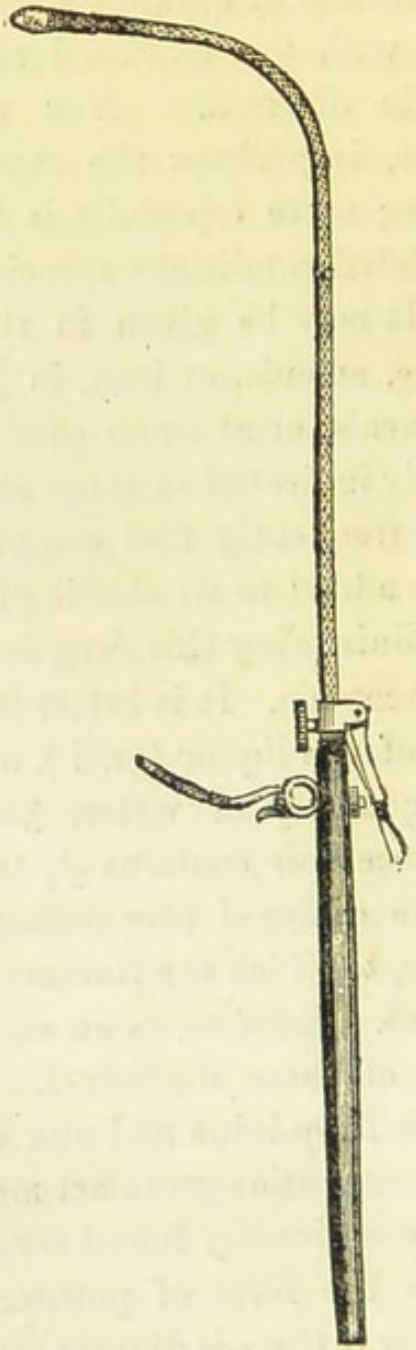


FIG. 72.—Laryngeal Rheophore which may be used for the Uterus.

means of treating ordinary amenorrhœa. I have never passed it for this object myself, and I am certain that if practitioners do interfere locally, they have a more effica-

cious means in galvanization and the employment of the galvanic stem and pessary. If electricity is likely to do good, perhaps the safest mode of applying it is directly to the cervix, by means of such a rheophore as that of Maw or the ordinary one employed in affections of the vocal cords and larynx (Figs. 71, 72). It is easily applied inside the cervix through a speculum, and the strength of the current can be regulated by such a battery as the simple bichromate one supplied by any instrument-maker. The current is not completed until the sponge of the rheophore is passed

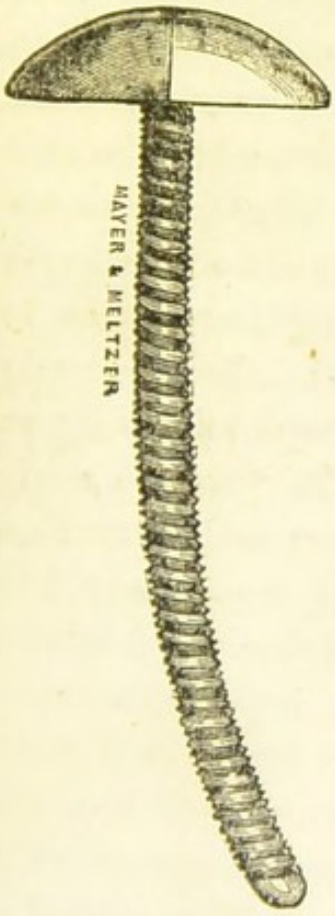


FIG. 73.—Stem of Barnes (Galvanic).

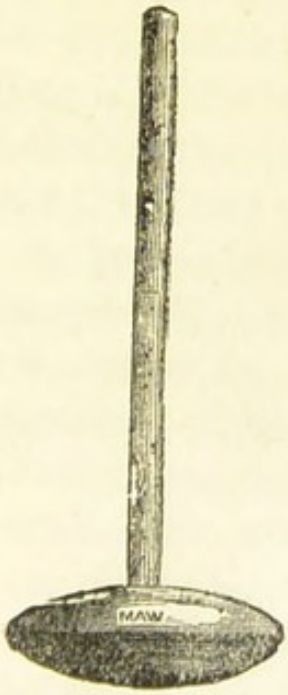


FIG. 74.—Rigid Galvanic Stem.

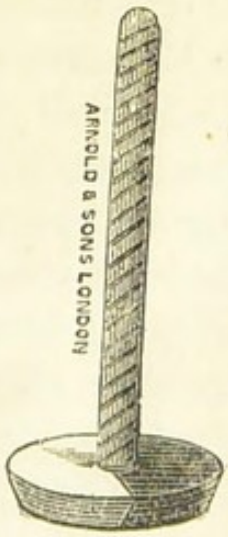


FIG. 75.—Simpson's Galvanic Stem.

inside the cervix, and the lever spring touched. The other pole can be applied over the hypogastrium or on the sacrum.

If the galvanic stem is inserted, the uterine canal must be

sufficiently dilated to permit of its passage, and the stem passed into the canal either by the direction of the finger or the aid of a speculum. Once inserted, if there is a disposition to slip out, it can be retained in position by a small tampon of salicylic wool soaked in glycerine. It should be looked at occasionally and re-inserted, lest the secretions may have corroded the metals and softened the stem.

CHAPTER VII.

DYSMENORRHŒA.*

Pain, Some General Remarks on.—Such states as congestion, obstruction, neuralgia, all associated with more or less of spasm, are constantly met with in the same individual. In one large group of cases we find a tendency to amenorrhœa and scanty menstruation. The pain is clearly associated with anæmia; while in others, the tendency is rather to plethora and congestion. So also the situations in which the pain occurs are variable—in the region of the ovaries (generally one ovary)—if the ovaries are, as is frequently the case, the organs at fault; pain in the back and over the pubes, if the principal cause of the dysmenorrhœa is in the uterus; reflex pain in different parts, head, chest, abdomen, accompanying the local pain, is present in some degree, in most cases of chronic dysmenorrhœa. Equally uncertain are the nature of the pain and the time of its occurrence, varying from some slight aggravation of the common systemic disturbance antecedent to the menstrual flow, with pain referred to the back or sides, disappearing when the discharge appears, to the indescribable agony which the friends of the patient say 'they can only compare to labour-pains.' The pain may precede the flow, or cease as this commences, or it may last all through the period, exhausting the woman physically and mentally. It is in such cases that the mind after a time is weakened, each period causing further prostration, until at last delirium is present, or

* See Appendix.

perchance some permanent form of mental aberration results. The term 'hysterical' is often employed to describe the pain complained of in these cases; so also a special class of pain is spoken of as 'neuralgic.'

I am afraid both terms are apt to mislead in practice. It cannot be doubted that a large amount of the pain complained of we are justified in grouping with those other symptoms which are met with in the general state known as hysteria, and with the type of pain looked on as neuralgic. And it is likewise true that the mental condition of the woman leads her to exaggerate the suffering, and describe it in extravagant language, while her weakened nervous system cannot sustain any acute or prolonged pain. This is still further exaggerated by the recurring anticipation before each period. But if such considerations influence a practitioner to regard any form of pain as fanciful or unreal, and induce him to look on his patient as 'whimsical' and, as he is commonly pleased to say, 'hysterical'—though what he may mean by this latter generalization he would find it often very hard to explain—he will make a serious mistake. It may lead him off from a careful examination of his patient; and the source of the disorder in ovary, uterus, or vitiated state of the circulation, or in a depraved nervous system, may be overlooked. It is the safest rule in practice *never to despise pain*, no matter how trivial, and always carefully to seek for the cause of it. Not the less must we do so because we feel convinced that our patient's mental powers are weakened.

It has been reported that a woman who suffered agony from ovarian dysmenorrhœa was completely relieved by the deception of an incomplete Battey's operation. She was placed under chloroform, and only the preliminary cutaneous incision made. I have myself seen the application of a metal disc over the ovary relieve ovarian neuralgia. Not

long since I had a patient who, for some time, had morphia injected subcutaneously for the relief of ovarian and other pains: she suffered from most severe dysmenorrhœa. Occasionally she craved for the morphia, and implored us to increase the strength of the injection. By the justifiable deception of seeming to yield to her entreaty, while frequently only pure water was used, she had a good night's rest, and expressed herself as completely relieved the next day. We have no stronger proof of psychical influence over physical conditions than in the various applications of metallo-therapeutics, and the strange effects of metal discs applied for the relief of hysteria and hystero-epilepsy. But I by no means desire to be understood as doubting the conclusions of the eminent French psychologist, Professor Charcot.* I think that in ocular therapeutics, and in the effects of the metals when applied for various retinal states, we have evidence of the direct physical results of metallo-therapy. I refer to the work of the Salpetriere physician rather to impress on the student's mind the double-sided nature of most ovarian disorders. On the one side physical, from the slight congestive and hyperæsthetic to the various pathological conditions met with; on the other, psychical, as seen in all the so-called hysterical affections and states, complicating both the normal act of ovulation and any abnormal departure from the healthful performance of the ovarian function. From

* The reader should refer to the New Sydenham Society's volume of 'Charcot's Lectures,' in which he discusses the view that the ovary is the *point de départ* of the paroxysm in the attack of hysteria and hystero-epilepsy—moderate pressure over the ovary inducing the aura hysterica, while more energetic compression arrests it, and also cuts short an attack, even when the convulsions have commenced. Pressure is made and maintained by the closed fist, which is pressed into the iliac fossa. Dr. Graily Hewitt has drawn attention to the fact that this pressure also acts on the uterus, compressing its vessels, and diminishing uterine congestion. He regards uterine displacements as having more to say to the hysterical phenomena than the dislocation of the ovary.

what has been said, it may be gathered that I regard as of doubtful scientific accuracy any classification which has been made of dysmenorrhœa; yet here, as in other efforts to classify affections in which no well-marked lines of demarcation exist, we gain much in clinical diagnosis and treatment from the grouping of ideas resulting from a classification, though it may not be critically accurate. Broadly, we keep always in our mind, in practice, the dysmenorrhœa, which has its source in the ovary and its appendages rather than in the uterus. The pain is characteristically ovarian, and we seek for congestion, swelling, sensitiveness, displacements of the ovary; there may be adhesions or effusions, and localized swellings in the broad ligaments or Fallopian tubes. Or, on examination, we find immediately a satisfactory explanation of the suffering in the formation of the uterus, in the congested cervix, the contracted uterine canal, some flexion or version, or an inflammatory state of the mucous membrane of cervix or fundus. The relation of ovary to uterus is too close to expect to find this distinction, of ovarian and uterine dysmenorrhœa, clinically marked in a large number of cases; and thus we have the affected ovary reacting on the uterus, and any serious inflammatory affection of the latter organ influencing the former. But we are constantly meeting the case of dysmenorrhœa in which we can detect no fault either in ovary or uterus. The uterus and ovaries are normal in size, position, and their freedom from adhesions; there is no fault in the patency of the uterine canal. Here we must look to the circulation or nervous system for the cause of the pain, and this is obvious either in the depraved quality of the blood, as in some anæmic state on the one hand, or in excessive blood-supply—a general plethoric condition of the system—on the other.

I. Congestive Dysmenorrhœa.

Causes.—Plethora; arrested or suppressed menstruation; inflammatory states of the uterus and endometrium; displacements of the uterus; subinvolution; fibroids; polypi.

Symptoms.—Pelvic pain frequently preceding the appearance of the menstrual flow, at times continuing during the period, generally aggravated previous to, and for the first twenty-four hours of, the discharge; the pain may be accompanied by constitutional disturbance; the uterus is found swollen, tender and sensitive both to external pressure and internal examination; on a vaginal examination with the speculum we frequently find the characteristic mucous plug of endometritis blocking up, or hanging from, the os uteri.

II. Obstructive and Spasmodic Dysmenorrhœa.

Causes.—Mechanical obstruction to the flow of the menstrual discharge, due to stenosis of the cervical canal or os uteri; congenital malformations; uterine displacements which cause a narrowing and bending of the canal, and which favour interstitial effusions into the cellular tissue of the uterus with resulting hyperplasia and contraction; traumatic—operative measures which result in stenosis; polypi and fibroids.

Symptoms.—Pelvic pain varying in intensity, often agonizing, preceding and accompanying the menstrual discharge; at times severe constitutional disturbance, violent headache, and sickness of the stomach; the mind may become weakened by the recurring agony, and mental delusion follow, or the patient may even become maniacal. Pelvic peritoneal symptoms are frequently present; and the onward passage of the blood being prevented, a pelvic hæmatocele may form. There is, commonly, as also in the con-

gestive varieties, considerable ovarian irritation, with pain and sensitiveness of the ovaries; neuralgic pains; attacks of uterine colic and spasm; hysterical tendencies. Vicarious hæmorrhage may occur elsewhere; retinal infarctions and effusions, epistaxis, hæmatemesis or hæmoptosis; the blood becomes depraved; the patient is anæmic or chlorotic; the skin may have a yellowish-green or discoloured look. It may be that many of these symptoms are in abeyance until the increased sexual activity and local determination and excitement, consequent upon marriage, react on both the ovaries and uterus. Thus frequently we find the first great distress and pain complained of after marriage.

Spasmodic.—Every practitioner will meet with cases of dysmenorrhœa in which he can find no satisfactory reason for the pain, in any abnormal state either of uterus or ovary. Even if there is a version or flexion, he finds that the uterine canal is pervious; he rectifies the displacement, and still the pain recurs. There may be some congestion of the uterus, and ovarian tenderness, or hypersensitiveness of the internal os on passing the sound, yet not sufficient to explain the violent spasmodic pains that precede or accompany the earlier appearance of the menstrual discharge. At times we notice, as characteristic of this form of pain, that the patient states that some clots have passed, and that on the appearance of these the pain has been relieved. The passage of these clots is occasionally followed by a profuse, or rather prolonged, flow. Dr. Matthews Duncan has drawn attention to the clonic contractions of the uterus which occur in the unimpregnated state during menstruation, and he attributes to these contractions, when exaggerated and painful, the fits of spasm which occur in this form of dysmenorrhœa. Dr. Duncan rather doubts the truth of the mechanical theory as a cause of the pain. He regards it as the result of muscular spasm, and finds an analogy in the

attack of spasmodic asthma in the lung. Still, he associates with it, as an exciting cause, catarrhal states of the mucous lining of the canal, congenital defects, and also flexions and versions, and he treats the spasm by mechanical dilatation. It has always seemed to me that those obstetricians are right who see in spasm of the urethra, occurring in gouty constitutions, in old gouty states, or with attacks of gonorrhœal urethritis, and with lesser degrees of stricture, or following occasionally on some slight excess, a counterpart (though by no means an exact one) of the spasm which occurs in the cervical canal. In both, I believe, there is swelling and congestion, or some old contraction or flexion sufficient to excite spasmodic contraction of the sphincter fibres. We know that in the case of the urethra, the flow of urine is arrested by the spasm, and that it is re-established by the passage of a bougie. Here the cause of the spasm is to be sought for in the morbid condition of the blood or urethra, gouty or gonorrhœal. Pain occurs when the obstruction to the flow of urine prevents the escape of water, and with the efforts to expel it. No doubt, after the bladder has been emptied, in some cases of vesical and prostatic congestion, there is irritation and pain; but it is doubtful if this is due to 'spasm.' As Dr. Duncan rightly says, painful contractions of the uterus occur. But those that we are familiar with as after-pains, have for their object the expulsion of clots in utero, acting as foreign bodies, and there is the powerful and exceptional physiological effort of contraction of the uterine fibres to restrain hæmorrhage and bring about reduction in bulk.

We must remember that all through pregnancy we have uterine contractions occurring which are not painful, and which can be felt with the hand placed on the abdominal wall. Contractions become painful when there is blood to expel, or clots, as in after-pains. The therapeutic means we

adopt, such as dilatation, in order to cure the dysmenorrhœa, and the action of such medicines as apiol in relieving the pain, also incline me to think that in the case of spasmodic dysmenorrhœa we must still seek for the source of pain in the mechanical interference which is the consequence, partly, of the morbid or abnormal uterine condition, and partly of the spasm which that condition induces.

General Treatment of Dysmenorrhœa.—In determining the treatment of any case of dysmenorrhœa, we must be guided by the cause of the pain, and our remedies, general and local, should be such as are indicated by the constitutional aspects of the case, and any local fault that we may detect. Our first aim should be to correct any constitutional vice, such as general plethora, anæmia, chlorosis, dyspepsia, gout, hysteria, constipated bowels, and those habits which lead up to depraved blood conditions and interference with the general health. Attention to all those matters already referred to in the instance of amenorrhœa will be necessary—climate, food, clothing, and exercise, and abandonment of injurious amusements and occupations, or morbid excitements. Change of air, proper exercise, healthful and regular diet, with attention to the bowels, will cure many a case of dysmenorrhœa without further interference. With anæmic and chlorotic complications, the different chalybeates before referred to, and especially the combination of arsenic, iron, and quinine, must be tried. If we have reason to suspect a gouty diathesis, the salts of potash, lithia, soda, magnesia, are indicated, and these can be given with the bromides of potassium and ammonia, or with colchicum or guaiacum. The salicylates of quinine, lithia or soda (effervescing or granular) will be found agreeable and useful preparations. The combination of iodide of potassium, bromide of potassium, and bromide of ammonia, is most valuable. In atonic conditions of the bowels attended with

flatulence, tincture of nux vomica with glycerine, and such carminatives as the compound tincture of chloroform or the spirits of lavender, will frequently relieve. In dyspeptic cases, if there be gastric acidity, the salts of bismuth in combination with carbonate of soda, especially the oxychloride of bismuth, and pepsine, or lactopeptine, are indicated.

For constipated bowels we should not hesitate, if laxatives and mild purgatives fail to operate, to advise the occasional resort to enema.* The natural waters, Hunyadi Janos, Æsculap, Friedrichshall, Pullna, Carlsbad, Victoria, are the simplest, and, if they act, the best saline aperients we have. They should be given early in the morning, and a little warm water (about a tablespoonful to the wine-glass or two of Hunyadi Janos) added. The liquid extract of Cascara Sagrada is a very useful aperient (extract cascara liq., ℥i., glycerine, ℥i., water, ℥vi., ℥ ß. as a dose). Generally, a small cup of warm tea or coffee, taken immediately after, will assist the action. A mild alterative or aperient pill can be taken the night before. With many, a tamar confection is quite sufficient an aperient. But habit has much to say to constipated bowels, especially in women. We should insist on a daily effort being made, after breakfast, to relieve the bowels, and often a drink of cold water, at or after breakfast, will help. A moist pack, worn over the abdomen at night, made of a few layers of lint wrung out of tepid water, and covered with an oiled silk pad, I have frequently known assist the action of the bowels. So far as possible, we should avoid drastic purgatives, or giving encouragement to the constant use of every variety of 'aperient pill.' Some brown bread, softer food, fruit, and

* Either the Pulvis Glycyrrhizæ Co., or Pulv. Liquiritiæ Comp. of the German Pharmacopœia, in doses of 30 grs. to a drachm, may be given as a mild but effectual laxative in the mornings.

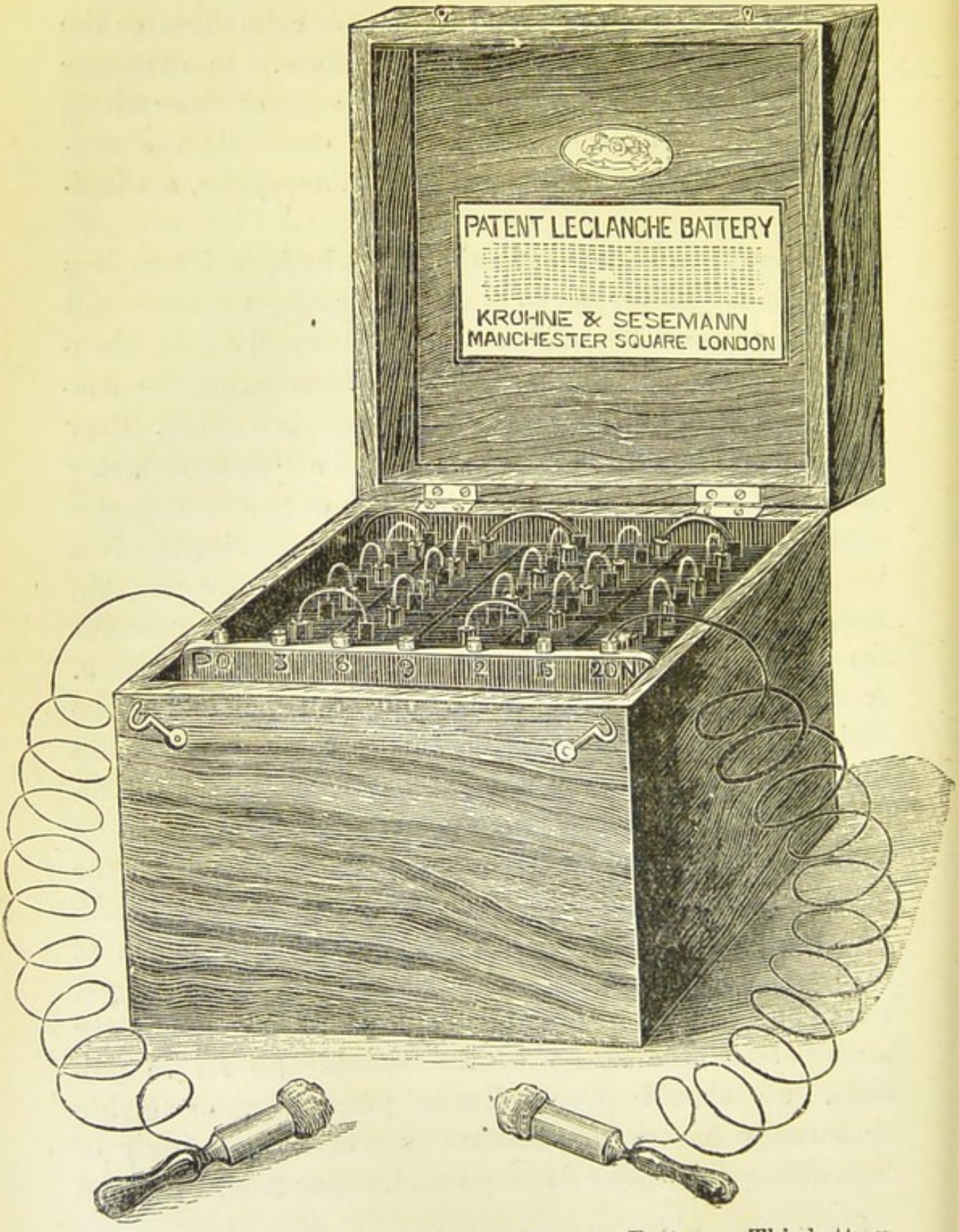


FIG. 76.—Leclanche's 20-cell Constant Current Battery. This battery is very simple, and should last for two years without renewal.

vegetables, with some simple assistance, will generally obviate the necessity for so injurious a custom. I have no doubt that good is also effected by wearing one of the many varieties of electrical apparatus now so elegantly contrived for female use. If the pain be referred particularly to the region of the ovaries, and assumes a neuralgic type, the bromides of sodium, potassium, and ammonium are indicated. An excellent combination is that of bromide of potassium (gr. xv.), and hydrate of chloral (gr. xii.), given at intervals of four hours when the pain is felt. An enema of chloral and bromide of potassium will be found of service. Tincture or extract of Cannabis Indica, tannate of cannabin, humulus lupulus (tincture or extract), lupuline, monobromate of camphor, apiol (in capsules), nepenthe or codeine at night, or the subcutaneous injection of morphia, are all of use to subdue the pain.

Hysterical and Neuralgic Cases.—There is a strong objection to resorting to the subcutaneous injection of morphia in hysterical women if we can possibly avoid doing so. Often a habit and craving is encouraged, with all its pernicious consequences; or, if persisted in, the morphia acts on the brain, and the symptoms of morphia mania may be developed. Locally, benefit may be derived from the use of the constant current applied over the inguinal region, 10 to 15 cells of Leclanche's battery (Krohne and Seseman) applied daily; pigment of iodine with belladonna; a combination of chloroform (ʒiv.), extract of belladonna (ʒii.), tincture of aconite (ʒiv.), camphor (ʒii.), mastich (ʒiii.), rectified spirit (ʒi.), laid on with a brush over both ovaries; vesication over the ovary with a little chloroform applied on a watch-glass. But in every case of so-called 'neuralgic' dysmenorrhœa, we must seek farther than the situation of the local manifestation for the cause of the pain. In the intervals between the periods, the closest attention must be

paid to the general management of the case; any constitutional defect has to be rectified; tonics should be given, such as quinine, arsenic, bark, mineral acids, strychnine or nux vomica, the salts of zinc; chalybeates if the patient be anæmic; salines and mineral aperient waters if the tendency be to plethora. *The hysterical temperament* has to be met by such remedies as the bromides, in combination with valerian, assafœtida, or galbanum. Much more may be achieved by correcting errors of diet, and the abuse of stimulants, attention to exercise, and by giving the mind healthful occupation, with such agreeable outdoor recreation as circumstances will permit.* It is in such cases before all others, unless they are absolutely demanded by some local condition, that we should discountenance vaginal examinations, speculum introductions, uterine manipulations. If there be in the unmarried girl a leucorrhœal discharge during the intervals between the periods, in a large proportion of cases it will disappear with appropriate constitutional treatment, aided by the vaginal douche, and some such astringent or alkali added as borax, alum, sulphocarbolate of zinc, carbonate of soda or permanganate of potash. If it should not do so, or that in the first instance, from the severity of the symptoms or their persistence, we are suspicious of local disease or abnormality, an examination is justified; but, I repeat, that such a step is not to be unnecessarily advised or uselessly persisted in.

The same remark applies to those cases of married women, now found floating about in such numbers, who have been to this doctor and that, who flippantly detail all the therapeutic means known for the cure of sterility and dysmenorrhœa, and appear to have exhausted all the resources of imagination and art. The womb has been 'slit,' 'cut,' 'stretched, 'replaced,' 'depleted,' not by

* See Weir Mitchell's 'Rest Cure,' p. 128.

one medical adviser, but by two or three; yet they are none the better but infinitely the worse, morally, mentally, and physically, for all this ingenious exercise of manipulative skill.

To restrain a woman from healthful intercourse, with proper intervals of rest, while she is made the victim of exhaustive vaginal explorations and pessary adjustments, appears to me to have in the practice neither reason nor justice. Erotic tendencies are sustained, and the whims and fancies of hysteria are encouraged.

Plethora.—Here, if we find that there is a plethoric state of the system, a few leeches over the ovaries, or about the anus, shortly before the period, and depletion of the cervix, will be indicated. When we can so cleanly, quickly, and efficiently deplete the uterus with the uterine lancet, we rarely need require to apply leeches to the womb itself. Every purpose can be served by puncturing. In these plethoric cases we derive benefit from salines, the various saline waters, occasional aperients, close attention to diet and exercise. Iron has to be carefully avoided. Digitalis, with bromide and iodide of potassium, is a useful combination.

In congestive cases I have found benefit from the administration of a pill containing lupuline, ergotine, extract of cannabis, of each gr. i., taken three times daily, alternating these doses with the bromide of potassium and chloral mixture. In these congestive cases we must be particularly careful in the use of stimulants. It is far better to insist on the total relinquishment of all alcoholic drinks. If the patient cannot be induced to abandon stimulants, we had better recommend some light wine, as Claret, Hock or Sauterne. The local means to combat dysmenorrhœa will be determined, according to the state of the uterus with which, on examination, we find it associated. There may be a ver-

sion or flexion requiring rectification, and the application of a suitable pessary. The canal of the cervix may be contracted, necessitating the use of a stem-pessary and the dilatation of the canal with the uterine bougies. We can in a few days, commencing with the bougie of 11 millimetres, increase to 30 millimetres. If the stenosis be extreme, and the cervix conical, the best course will be to prepare our patient for the division of the cervix, and to perform this operation about ten days after the menstrual period has ceased. After division, we use the glass stem of Sims, or one of the intra-uterine stems of Greenhalgh (Figs. 77, 78), or the galvanic

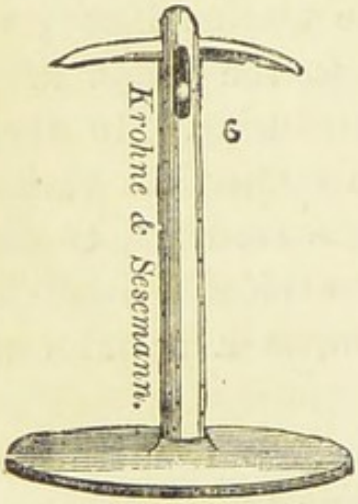


Fig. 77.

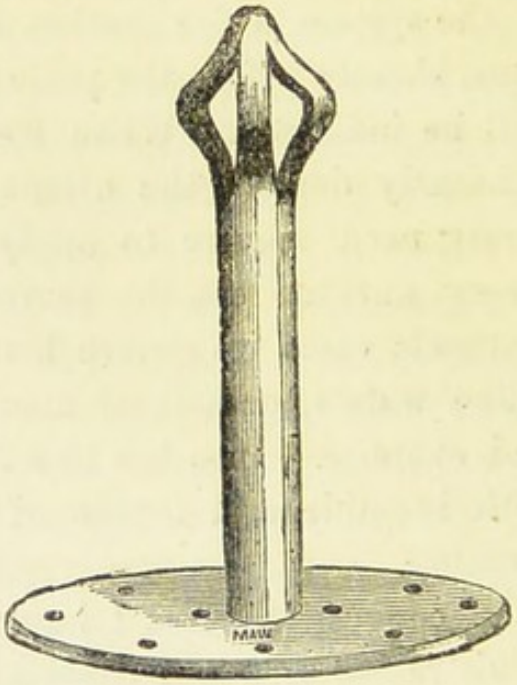


Fig. 78.

stem-pessary can be inserted in cases of congestion with scanty flow. Inflammatory states of the uterus, catarrhal, cervicitis, and endometritis, should they be present, must be treated. Should any polypus block the passage, or a uterine fibroid obstruct the flow, each has to be specially dealt with. If the woman's life is rendered miserable by recurrent attacks of pain and intolerable suffering, especially if a growing fibroid implicates the canal, and other means have been exhausted without any benefit, we should not hesitate

to advise the operation either of Battey or Lawson Tait, placing fairly the exact risks of the operation before our patient.

In those cases of *ovarian dysmenorrhœa* in which the pain precedes the menstrual flow, and is characteristically ovarian, attended by sensitiveness and fulness in the ovary at either side—a fulness which can generally be felt through the vaginal roof or rectum—leeches applied either in the region of the ovaries or near the anus, vesication, warm sit-baths, full doses of bromide of potassium or ammonia, are the best means of obtaining relief.*

I have seen some splendid results in these pitiable cases of chronic ovarian excitement, with various neurotic troubles —insomnia, loss of appetite, wasting, morbid fancies, and numerous reflex pains—from Dr. Weir Mitchell's plan. The principles of his treatment are: 1. Rest and seclusion of patient. This includes the exclusion of officious, meddling, injudicious and over-sympathetic friends; the assistance of an intelligent, refined, firm, judicious, and neat nurse and companion. If there be retroversion of the uterus, the patient is kept as much as possible in the prone or face position. This rest treatment must be continued for some months. 2. Change of diet. This consists in feeding the patient with a light but nutritious and moderately stimulating diet, much in excess of the demand necessitated by the daily waste—principally milk at repeated intervals; soups; malt preparations ('Ferrated Maltine' will be found an admirable remedy); some wine, such as burgundy, hock, dry champagne, and other generous diet. 3. The administration of iron. 4. The use of massage and electricity. A skilled rubber should practise the massage. This kneading of the skin and muscle of the entire body is practised for the space of half an hour to an hour daily. Cocoa-nut oil is employed to assist the

* See Chapter or 'Ovaritis.'

massage. The constant-current battery is used, or a mild Faradaic current applied over Ziemssen's points. Fourthly, this treatment may be supplemented after a time by the use every morning of a tepid spinal douche, while the patient sits on a stool in a bath-tub with her feet in warm water; the water poured over the back has, at first, a temperature of 80°, and is reduced one degree daily, until it is brought to the ordinary temperature. Suitable friction follows the douche, the patient dressing rapidly and taking a brisk walk after some food, but it should not be of sufficient length to exhaust the strength, or tire.

True Membranous Dysmenorrhœa

Is not a common affection. Here we have exfoliation of the uterine mucous membrane, either in the form of shreds, or sometimes as a complete cast of the uterine cavity in which are the orifices of the Fallopian tubes or os uteri. Some years since I had a lady under my care who suffered most severely at the menstrual periods, and had always done so. Before marriage, however, she had passed these casts of the uterus, and this continued for the first year after marriage. The little membranous exfoliation preserved completely the form of the uterine cavity. The affection yielded in time to treatment; she became pregnant and has now a family. This form of dysmenorrhœa is not necessarily related to conception, and may occur in virgins; it does not of necessity cause sterility, though as long as the affection persists it predisposes to this condition. Microscopically the membranous layer is found to be composed of connective-tissue, glands, and deciduous cells. The passage of the membrane is not always accompanied by pain. There is frequently associated with this form of dysmenorrhea a state of inflammation of the uterus—endometritis. We must not confound this membranous cast with an exfoliation or a

blood-coagulum. The microscope and a little care will prevent this error. Much light has been thrown both on the etiology and treatment of this affection by Dr. John Williams, of London. If we hope to alter the character of the menstrual act radically, we must alter the nature of the uterine mucous membrane. Inflammatory complications must be subdued if they exist. The interior of the uterus should be treated during the intervals between the periods by such remedies as fused nitrate of silver or sulphate of zinc points, nitric acid, iodine, carbolic acid. If the pain be severe during the separation of the membrane, chloral and bromides, opiate suppositories, belladonna and morphia, vaginal pessaries, morphia injected subcutaneously, will give relief. It is better, while the patient is under treatment, to forbid coitus. The patient can in the intervals wear a galvanic stem-pessary, and galvanism may be used to the interior of the uterus in the manner already indicated.

CHAPTER VIII.

MENORRHAGIA, METRORRHAGIA AND LEUCORRHŒA.

Hæmorrhage.—I have already given a brief classification of hæmorrhage, whether as a simple exaggerated menstrual flow, or that which occurs independently of menstruation, due either to disease elsewhere or having a strictly local origin. In dealing with any case of uterine hæmorrhage some broad practical rules have to be remembered. I should say in their relative order of importance they are as follows :

1. Never to neglect or trifle with, by simple palliative measures, an unusual, continuous, or exaggerated loss of blood from the uterus.
2. Always to remember that the hæmorrhage is but the sign of something abnormal elsewhere, or of disease in the uterus itself.
3. Our first anxiety should be directed to the *cause* of the hæmorrhage.
4. In case of doubt make a careful vaginal examination ; and should this not explain the cause, and if the hæmorrhage continues, dilate the uterus and explore its cavity.
5. Once the cervix is dilated, it is better to maintain a certain degree of dilatation, as long as the discharge of blood continues.
6. The local conditions most frequently met with which cause hæmorrhage are : Fibroid tumours, subinvolu-

tion, endometritis and cervicitis, erosion of the os and cervix externally, granular states, malignant disease, polypus, uterine congestion associated with flexion, ovarian congestion.

Our treatment of hæmorrhage may be divided under two heads: (1) The correction of any general cause, such as organic disease in the heart, lungs, liver, spleen, kidney; or the control of the discharge during the exanthemata, in purpuric states, and at the climacteric period, or after pro-



FIG. 79.—Vaginal douche.

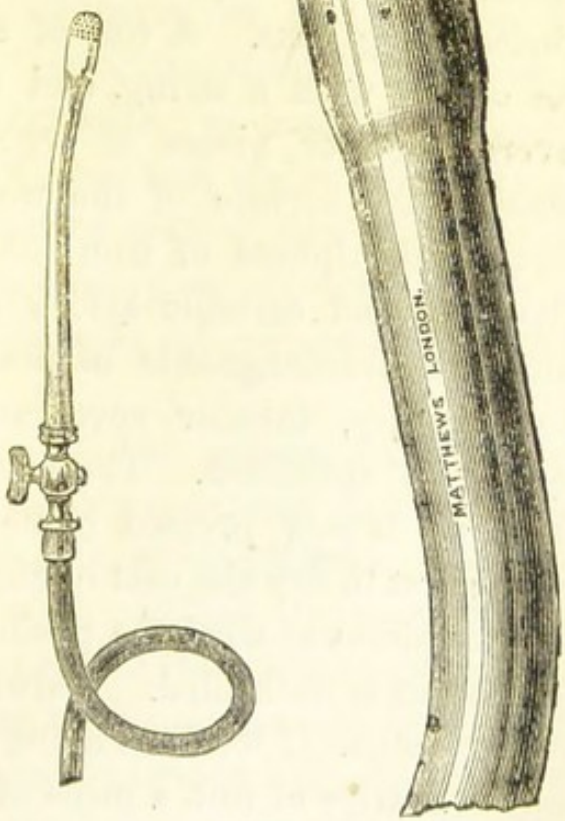


FIG. 80.—Hayes' tube.

longed lactation. (2) The removal of the local cause by operation or other local treatment.

It is not my intention to enter into the different means of checking hæmorrhage, as this is necessarily done when detailing the treatment of the various morbid conditions

that give rise to it. But it may be well to tabulate the most useful and efficacious hæmostatics and astringents we possess:

1. *Heat.*—By the vaginal douche and water at 110° to 112°.

2. *Cold.*—Vaginal douche; ice-bag in vagina; double tube or cold tampon in vagina; ice-bag or bladder over pubes. Cold always to be used with caution where there is great debility or tendency to collapse—Leiter's tubes placed over the uterus.

3. *Tampon.*—Sponge-tent inserted into cervix—sponge acts both as a dilator and plug; vaginal plug.

Vaginal Plug.—In many cases of hæmorrhage from the cervical neck, after operation on the cervix, in granular states, and after depletion, we may make a convenient and efficient plug thus. A roll of salicylic acid wool is tied in the centre with a string, and spread out umbrella-shape; several smaller pieces of wool are at hand. We may moisten the surface of the wool with a little perchloride or the subsulphate of iron solution, extract of hamamelis, glycerine and carbolic acid, glycerine of tannin, or glycerine and permanganate of potash solution. A large, but not lengthy, tubular speculum is introduced, or, better still, Sims' speculum. The medicated wool with the string attached is now pressed home well against the os—it is better first to dry the part of any blood—and following it the smaller pieces of wool are pushed in, until the upper part of the vagina is well filled. I always remove such a plug after twelve hours. If we want more securely to fill the vagina we may use strips of lint, a piece of tape being tied to those first introduced. The lint may be moistened with carbolic, or permanganate of potash, solution. Two rules are to be always borne in mind in regard to plugging—(*a*) Never look on plugging save as a temporary expedient for the control of hæmorrhage; (*b*) never permit a plug to remain for a longer period than twenty-four hours at the farthest in the

vaginal cavity, and always disinfect and cleanse the vagina after the removal of the plug and before a second is inserted.

4. *Local Therapeutic Agents.*—Alum, in tampon or injection; persalts of iron; perchloride of iron, either as the liquor, or, what is far preferable, the plain solution of the solid salt, made any strength (gr. xxx.—ʒi. ad ʒi.); subsulphate of iron solution (ʒf. ad ʒi., Sims); ferro-alumen; gallic acid; tannic acid; matico in injection; hamamelis. The interior of the uterus may be wiped with any of these agents by means of the uterine probe.

5. *General Therapeutic Remedies.*—Ergot; ergotine, or sclerotic acid, given subcutaneously; ergotine, with lupuline and quinine, given in pill; tincture of perchloride of iron; infusion of matico, alone or in combination with perchloride of iron, gallic acid, tincture of digitalis, or extract of hamamelis; digitalis, in combination with ergotine, dried sulphate of iron and quinine; gallic acid (gr. xv. doses), with infusion of matico and liquid extract of ergot, or the ammoniated solution of ergot (Allen and Hanbury); quinine, with aromatic sulphuric acid, or diluted sulphuric acid.

The general management of the patient suffering from menorrhagia, will, in great measure, depend on the constitutional state or vice on which it is attendant. General or ovarian excitement must be controlled by bromides, here well given, with digitalis; in atonic states, strychnine may be administered in combination with quinine and iron; if the debility induces hysteria, the bromides with valerian (ammoniated tincture and infusion); in plethoric conditions, at the time of the menopause, and if there be any hepatic congestion, saline purgatives, bitter waters, vegetable cholagogues (podophyllin, iridin, euonymin), alternated occasionally with a mild mercurial, as a few grains of calomel or grey powder. If loss of blood has induced an anæmic or

chlorotic state, iron should be judiciously administered in any of the forms already mentioned; the dialyzed preparation of Squire, Fellow's, Easton's, or Dusart's syrups, being excellent forms to administer it in.

Leucorrhœa.

Of all the terms used in gynecology, this one—leucorrhœa is employed in the loosest and most misleading manner, both by student and practitioner. By leucorrhœa we understand generally, in practice, what women call 'the whites.' If we restrict the use of the term to simple exaggeration of the normal secretions, whether coming from uterus, vagina, or vulva, or to some catarrhal state of the mucous membrane, it would be, perhaps, correct to speak of uterine (corporeal and cervical), vaginal and vulvar leucorrhœa. But it must be remembered, that simple excess of the normal physiological secretion rarely proceeds for a length of time without producing pathological changes in the tissues, which we must keep quite distinct from a slight perversion or simple exaggeration of secretion. Such a correctly styled, leucorrhœal flow, we meet with, typically, in pregnancy, in young girls with debilitated constitutions, and in those suffering from anæmia. To mix up the idea of any morbid secretion, the result of pathological changes in the tissues, with ordinary leucorrhœa, is simply to lead the practitioner into errors both of diagnosis and treatment. On the one hand, he may force unnecessary examinations, overtreat by local measures, apply topical agents to healthful structures, raise unnecessary alarm; or, on the other, he may be tempted to pursue an expectant plan of treatment, hoping in vain that he can control a discharge, which has its source in some diseased state of the uterus, by palliative measures and general constitutional remedies. I shall, then, confine my observations to leucorrhœal discharges proper.

I have already, in the table of discharges, epitomized the distinctive features of the secretion poured from the uterus—body or cervix, the vagina and vulva. In some cases simple leucorrhœal discharge is very profuse; perhaps it altogether supplants the normal menstrual function. This form of discharge we frequently are consulted for in connection with either amenorrhœa or some irregularity of the menstrual flow, and its accompanying anæmic or chlorotic condition. We also meet with it as a symptom in gouty, rheumatic, syphilitic, tubercular constitutions. In leucophlegmatic children, occasionally—apart from the discharge of vaginitis—after the exanthemata, or associated with worms, and during dentition, we find a true leucorrhœal discharge. In young anæmic or chlorotic girls, a vaginal examination is, as a rule, not necessary. Only when, from other symptoms, we are led to suspect some inflammatory condition, or a version or flexion, is a digital examination called for. As a rule, in a married woman, it is the safest course to examine when we are told (unless she is pregnant) that she 'suffers from the whites.'

Our treatment has to be determined by the general aspects of the case. The different modes of restoring the general health, by chalybeates, tonics, attention to diet, and exercise, already pointed out in the treatment of amenorrhœa, must be resorted to.

As to local measures, we may do much by the vaginal douche, astringent and alkaline injections, more especially those of alum, sulphate of zinc, sulpho-carbolate of zinc, borate of soda. In children we must pay attention to the general health, and give some alterative, as small doses of rhubarb and grey-powder, or quinine and grey-powder; the various chalybeates—a course of syrup of iodide of iron, or Parrish's food; regulate the child's diet, and avoid all trash, such as sweets, cakes, fruit; let the child have proper baths, sea-bathing, and warm underclothing.

Simple uncomplicated leucorrhœa rarely produces irritation of the vulva, or any pruritus or eczematous inflammation, while we frequently find such conditions attendant upon vaginitis and discharges of a purulent or acrid nature, both from the uterus and vagina. (See 'Vaginitis.') In children, however, scrupulous cleanliness should be enforced, and the vulvar orifice inspected regularly, lest there be any irritation consequent upon the discharge.

CHAPTER IX.

UTERINE DISPLACEMENTS—ANTEVERSION AND ANTEFLEXION.

Principal Predisposing Causes of Uterine Displacements.*

General debility inducing relaxation of the uterine supports.
Pregnancy and labour—ruptured perinæum—laceration of cervix.
Pelvic adhesions—peritonitis and cellulitis.
Pelvic effusions.
Vaginal prolapse.
Violent muscular efforts.
Congested states of the uterus.
Distension of rectum or bladder.
Fibroid tumours of uterus.
Abdominal tumours—collections of fluid.
Subinvolution—areolar hyperplasia.
Imprudent habits of dress—tight-lacing—too tight binding after labour.
Sedentary occupations.

Important Displacements.

Anteversion and anteflexion.
Retroversion and retroflexion.
Prolapse.
Ascent.
Inversion.

* See Appendix, 'Alexander's Operation.'

Some Results, Direct and Indirect, of Uterine Versions and Flexions.

Dyspareunia (Painful Coitus).
Amenorrhœa.
Dysmenorrhœa.
Menorrhagia and Metrorrhagia.
Uterine congestion.
Uterine hyperplasia.
Uterine fibroids.
Stenosis and sterility.
Uterine prolapse and vaginal inversion.
Vesical irritation—incontinence—retention.
Rectal irritation—constipation—hæmorrhoids.
Perimetritis.
Parametritis.
Pelvic hæmatocele.
Locomotor troubles.
Sacral and lumbar pain—neuralgia.
Various reflex pains.
Abortion.
Ovarian congestion—ovaritis—salpyngitis.

Anteversion.

The uterus lies, in the normal condition, slightly anteverted in the pelvic cavity (Fig. 2). At times, owing to pressure from above, or posteriorly, or from yielding of its supports, above, below, or at the side, or from contractions or adhesions which drag on it anteriorly, the fundus uteri is thrown further forwards in the pelvis; and ultimately it is so far displaced from its proper relation to the pelvic brim that it rests against the bladder, while the os uteri is carried back towards the pouch of Douglas. As we would suspect, from the normal inclination of the uterus and the influences

which operate in producing the first exaggeration of it, we find this the most frequent of uterine displacements. So, where it is met with in its worst form, it is perhaps the most distressing to the patient, and the most difficult to relieve.

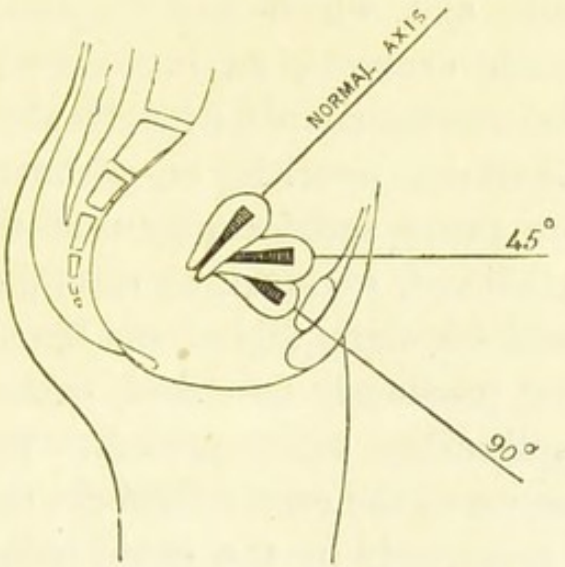


FIG. 81.

Any of the many affections I have just grouped as consequences of displacements may result from extreme anteversion. Those that are found as the most frequent attendants are—amenorrhœa and dysmenorrhœa, uterine congestion, uterine fibroid, stenosis, sterility, vesical and rectal distress, uterine prolapse, locomotor symptoms, sacral and lumbar pains, ovarian congestion, and ovaritis. It is a safe maxim in gynecological practice to look outside the bladder itself for the cause in any case where there is difficulty before or during the act of micturition, or symptoms of retention of urine. We shall very frequently find it in an anteverted or retroverted uterus. In like manner, when there is tenesmus, or a sense of pressure in the rectum and general rectal distress with the passage of

fæces which are in form suggestive of stricture, we may discover the cause in uterine displacement.

Diagnosis.—If we suspect the malposition there is no difficulty in quickly verifying our suspicions. We might, if careless, confound both anteversion and anteflexion with a fibroid of the uterus, or a vesical tumour; but we are more likely to overlook the pathological condition attendant upon, and which has frequently preceded, the version—as, for example, an intramural fibroid, subinvolution of the uterus, simple hypertrophy, an intra-uterine polypus, adhesions, metritis, or perimetritis. While we may therefore prove satisfactorily that the uterus is anteverted or anteflexed, we must, by careful measurement with the sound, and searching digital and bimanual examinations in the manner previously described, exclude any possibility of such complications being present. By digital examination, the absence of the cervix from the fornix of the vagina, its position posteriorly in the sacral hollow, and the detection anteriorly of the hard fundus, less so in the dorsal decubitus, will show that the uterus is anteverted. By abdomino-vaginal examination we can get the entire organ between our hands, and satisfy ourselves that this mass which is felt anteriorly is the fundus uteri. If there is still a doubt or suspicion of other complications, it may be necessary to complete the diagnosis with the sound. I shall, for the last time, repeat here the obstetric axiom—Do not take the uterine sound in hand in any case of suspected pregnancy. Most necessary is it to recollect this rule in the case of an enlarged and anteverted uterus. Should the possibility of pregnancy be excluded, more especially if we desire to use the sound both for a diagnostic and therapeutic purpose; we may pass it. This, at times, is not so easy an operation. It may be difficult, even when the sound is well curved, to get the knob into the os uteri in extreme anteversion. Some

old flexion may impede its progress; so may also a uterine growth. The important lesson we thus learn is, to use no force in the attempt. By carrying the handle well back, or by giving the instrument various degrees of curvature, we will succeed by gentleness and not by force.

Treatment.—In making our diagnosis we determine the degree of mobility of the uterus, or the extent to which it is fixed in the pelvis, or bound down by adhesions. We can, with the fingers of the right hand carried deeply behind the pubes, press upwards and backwards the fundus, while, at the same time, we steady the cervix with a finger of the left hand in the vagina, and draw it forwards. Should the uterus be so fixed that we cannot succeed in this manœuvre, the sound may be tried; but, unfortunately, if we fail by the digital method, it is seldom that we effect much greater permanent improvement in position by the sound. Recollecting the etiology of anteversion, it is obvious that the mere reposition of the uterus is frequently the least part of the practitioner's duty. The general health of the woman must be carefully attended to, and her secretions regulated; congested and hypertrophic conditions of the uterus, contractions of the cervical canal, any complicating tumour or effusion, ought, as far as possible, to be rectified, and any abdominal pressure relieved. In the meantime, we endeavour to raise the fundus uteri, and retain it in position by a pessary.

It must be clearly understood that these remarks refer to greater degrees of this form of uterine displacement. I quite agree with the opinions expressed by Dr. Matthews Duncan in his lecture on 'Minor Displacements' (see 'Diseases of Women,' p. 353), especially where he says, that were some modern doctrines well-founded, 'life for women would not be worth the having, for the position of no womb satisfies those who entertain them, and treatment has as

its ordinary consequence failure and disappointment, and sometimes grave disaster.' It is almost too ridiculous to see the array of pessaries, the fruit of not over-much mechanical ingenuity, now figured in every instrument-maker's catalogue. Truly, in obstetric art, this is 'the pessary age.' When everyday experience teaches us that any and every kind of pessary, in a very large percentage of cases, fails to give relief, and often only creates distress; when the truth of Dr. Matthews Duncan's statement cannot be controverted, that 'thousands of blooming, happy, fertile women have displacements;' when we consider that we are frequently creating an unhealthy state rather than relieving it—we will hesitate before we talk to women of the womb being 'displaced,' and still more so before we place in the vagina a pessary of any kind. It is deplorable the extent to which the charlatanism of pessary-adjusters has degraded practice, and opened the door for every form of inventive humbug. I have on several occasions taken out a pessary without the patient's being made aware that I have done so, and until her next visit she was none the wiser of its removal.

I take the liberty here of quoting Dr. Duncan's advice: 'Think twice before beginning the often baneful practice of using any instrument, teaching a woman to depend on what, if not positively useful, is positively injurious, though perhaps not much. Many a woman has suffered from, and many a woman has died of, a pessary; but most pessaries, as I find them, are nearly innocuous for evil or for good.' Writing as far back as 1876, Dr. Gaillard Thomas, referring to the general use of pessaries, says, 'Were I asked at the present moment whether I believed that in the aggregate they accomplished more good or evil, I should be forced to give a doubtful reply.' He goes on to attribute the injurious consequences, not so much to the instruments themselves as

to their mode of application. The septennial interval since the above was written has not lessened the mischief.

I confess to having always felt a feeling closely akin to shame, when, in lecturing on displacements, I came to exhibit to my class, and teach to students, the uses of the heterogeneous array of pessaries collected for demonstration. The student has an idea that it is as necessary for him to remember the name of the inventor and the mode of application of every pessary figured in some instrument-maker's catalogue, as it is to master the most important fact in the pathology of displacements: and from the 'examination' point of view he is not far wrong. Many even of those still sold are useful for no purpose that I know of, save to be handed down through some museum to posterity as interesting relics of this pessary period. Having thus briefly expressed my belief that the rash or indiscriminate use of pessaries is to be strongly condemned, I desire, on the other hand, not to be understood as undervaluing the assistance in treatment we obtain through the well-adjusted pessary. In all forms

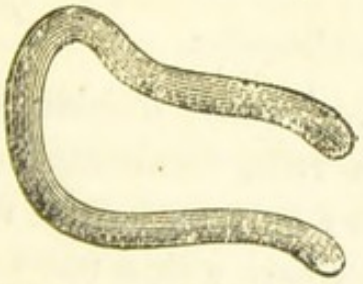


FIG. 82.—Open Hodge.

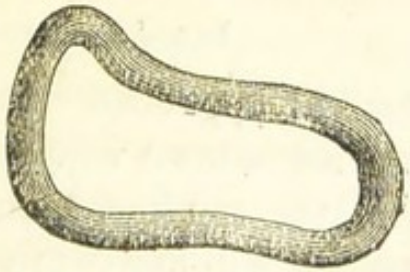
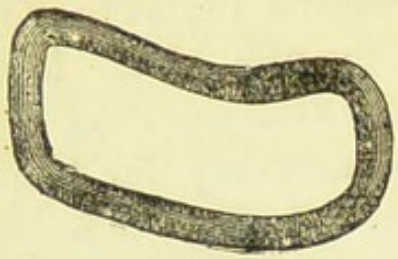


FIG. 83.—Vulcanite Hodge.

of displacement where its employment is clearly indicated it generally gives material relief. I know few steps in surgery attended with such obvious and immediate benefit and comfort to a patient, as the restoration of a retroverted uterus to its normal position, and its support and retention by a well-fitting Hodge's lever (Figs. 82–86). In the same manner, in varying degrees of descent of the uterus, which more or less accompany all versions and flexions, with an extemporized

Hodge suited to the case, or one of Dr. Greenhalgh's modifications (Fig. 86), we immediately secure that sense of support, and prevent the bearing-down feeling and associated pain



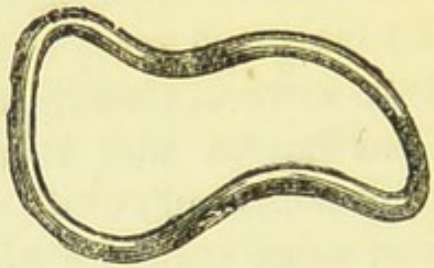


Fig. 84.—Hodge's Rubber Pessary. Fig. 85.—Metal (Smith-Hodge).

which are so distressing. Treatment can be continued while the pessary is worn; and by local means and general treatment the uterus and its supports can be so restored to a healthy state as to do away with the necessity for any

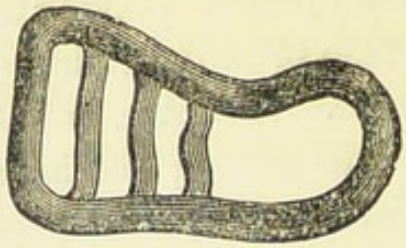


Fig. 86.—Greenhalgh's modification.

mechanical appliance. In graver degrees of displacement, proper mechanical support is, as a rule, an indispensable part of the treatment, and often the only part from which the patient will derive any benefit. Space would not permit me to refer specially to many of the different kinds of pessary with which gynecologists are familiar; many of which have been 'tried and found wanting' in practice. I shall, therefore, only refer to some of the most generally useful and best known pessaries now used for treating the different forms of displacements.

There are some safe rules to observe in regard to the use of pessaries in general practice:

1. Always make a careful digital exploration (the rectum

and bladder being empty), of the vagina and uterus before application.

2. In anteversion and anteflexion, if there be uterine congestion, sensitiveness, stenosis, or enlargement, avoid the continuous use of a pessary until these conditions be removed; trust meantime to dilatation of the cervical canal, periodical reposition with the sound, and dorsal decubitus, with general treatment.

3. Do not introduce a pessary until thoroughly satisfied of the reposition of the uterus.

4. Whenever possible, mould and fashion, from a celluloid or vulcanite ring, pliable metal, or the soft rubber and wire Hodge, the pessary you require, and regulate its size and shape, or lever-power, according to the degree of version or flexion, the tightness of the vaginal roof, the capacity and muscular tone of the vagina.

5. Always teach the patient how to remove a pessary, if there is any pain or discomfort from its use. In many instances it is equally easy to teach her how to reinsert it; but, as a rule, this should be done by the practitioner.

6. Let the patient be seen rather frequently at first, so as to ensure comfort in the use of the appliance, to detect any accidental displacement, and to watch for any vaginal irritation; all patients wearing pessaries should be kept under observation, periodical cleansing of the vagina with Condy's solution prescribed, and strict attention paid to the bladder and rectum. (It is well, in anteversion, to encourage the patient to retain the urine.) Always, when possible, contrive or select a pessary that does not interfere with coitus.

I do not believe that any verbal description can teach the proper selection or the correct adjustment of a pessary. This must be learned in the hospital ward, or in private practice; best of all in the extern obstetric department of a hospital.

In anteversion our object is to raise the fundus, and place such a support anteriorly as will prevent it relapsing into its old position. In many cases of anteversion sufficient support for the uterus can be obtained from a Hodge, moulded to suit the case.* The celluloid rings made by Messrs. Maw, of different sizes, can be readily converted, by dipping them in hot water, into any variety of lever support. We can rapidly shape a Hodge, with the arms of the lever of any length or shape we wish. With these rings, or with the rubber rings, we are enabled to adapt, for the case before us at the time, a pessary of any size or shape we think applicable to it. Dr. Galabin's pessary is a useful one. It is made of vulcanite (Fig. 87.) The

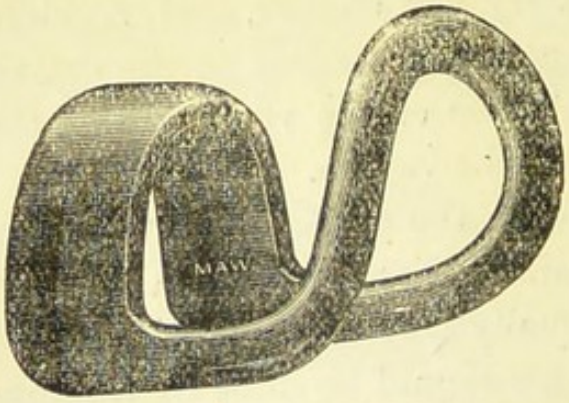


Fig. 87.—Galabin's Pessary.

anterior limb of Hodge 'is replaced by a broad arch directed upwards, and nearly square at its summit.' 'In introducing the instrument, it is at first passed entirely within the vulva, with the upper limb in front of the cervix; the index-finger is then passed through it, and hooks the upper limb back over the cervix and into the posterior cul de sac. It is well adapted for married women, and does not interfere with coitus.'

Figs. 88, 89 show Dr. Grailly Hewitt's cradle-pessary, and its relation to the uterus when applied. We introduce it by pushing in the large ring of the pessary through the vulva, pressing it steadily in an oblique manner upwards and backwards; the summit of the instrument is then carried into

* The celluloid rings should be strong; the flesh-coloured ring is to be preferred. I find it keeps its shape better than the red.

position in front of the uterus, its lower end being pushed gently upwards.

Fig. 90 shows the rubber pessary of Blackbee, which

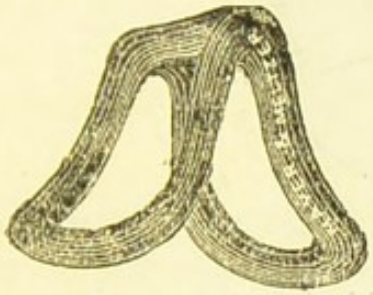


FIG. 88.—Hewitt's Pessary.

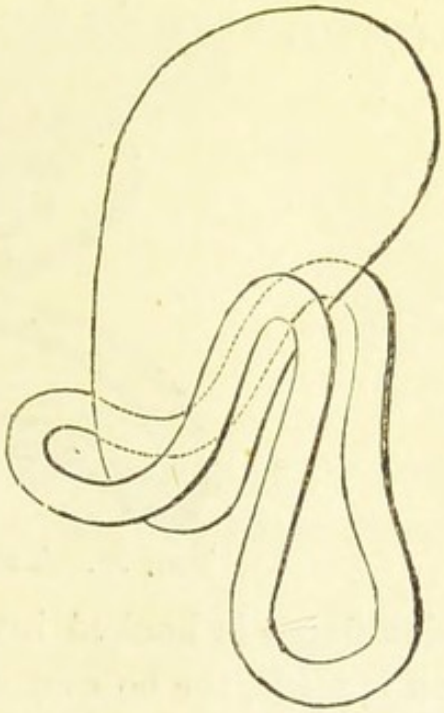


FIG. 89.—Hewitt's Cradle applied.

will be found easy of application and a useful pessary. It can be adapted both for anteversion and retroversion.

Thomas's anteversion pessary, with a movable lever, may

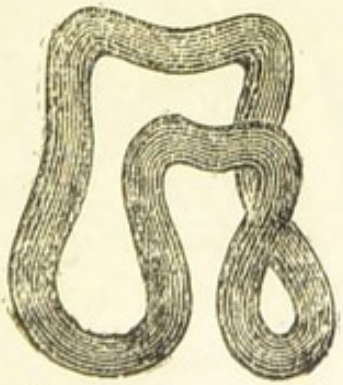


FIG. 90.—Blackbee's Pessary.

be had in vulcanite, or the elastic modification of it in rubber. I prefer it made of the latter material.

Fig. 91 shows the pessary open. To introduce it the ends are brought together, and the pessary, thus closed, is carried

under the cervix, which falls behind the anterior movable bow, while, the fundus falls upon it and the posterior bow lies behind the cervix. When the patient desires to remove the pessary, which she should be carefully taught to do, the

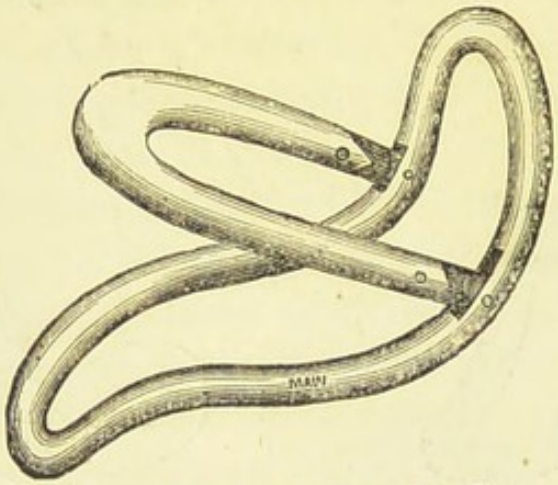


Fig. 91.—Thomas's Movable Lever.

index-finger is hooked into the lower end, and when traction is made, the bow falling back of itself, the appliance can be readily withdrawn. The improved anteversion pessary

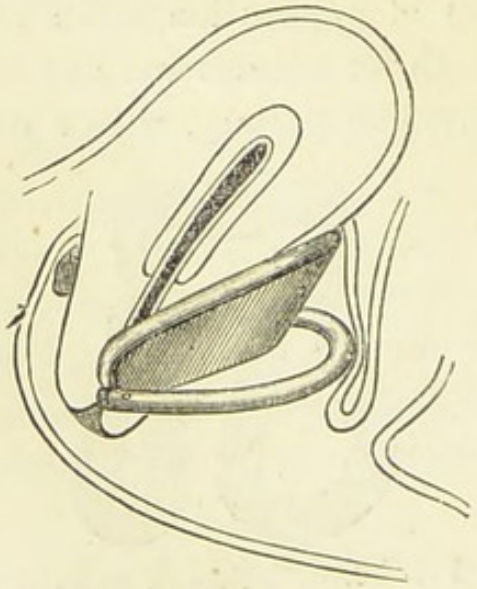


Fig. 92.—Thomas's Anteversion Pessary.

of Dr. Gaillard Thomas is shown in the figure (Thomas) as it lies in the vagina applied. I have given complete relief in some cases, after reposition, by adopting a Fowler's pessary of the proper size. Though this pessary is more applicable

for retroversion, still it will be found, in both forms of displacement, a safe, easily applied, and useful pessary by the general practitioner (Fig. 93).

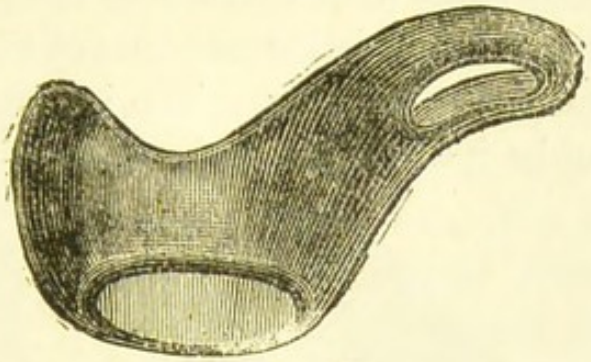


FIG. 93.—Fowler's Pessary.

When the pessary is in position, the neck of the uterus presents at the lower circular aperture, and the curved an-

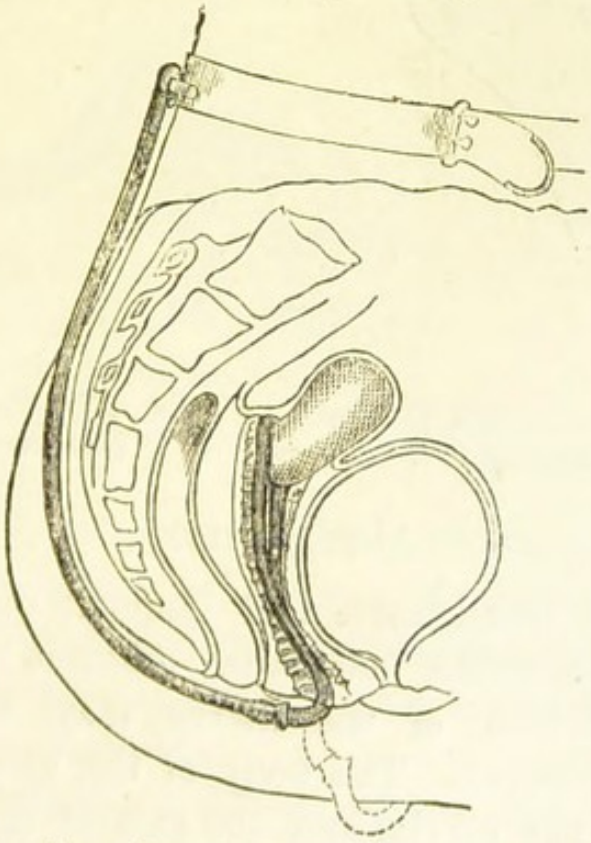


FIG. 94.—Cutter's Loop Pessary applied.

terior portion, with the small opening for the finger to facilitate introduction and removal, lies in front of the uterus.

The loop and bulb pessaries of Cutter can be applied both for anteversion and retroversion (Fig. 94).

The plan of all these external supports is the same. The lower portion of the pessary arches over the coccyx, and has attached to it an elastic cord connected with a waist-band. The stem may curve over the symphysis in a case of anteversion. The bulbs and bars of Cutter's pessary have been modified by Thomas. The bar may be made of rubber, and can be inflated (Fig. 96).

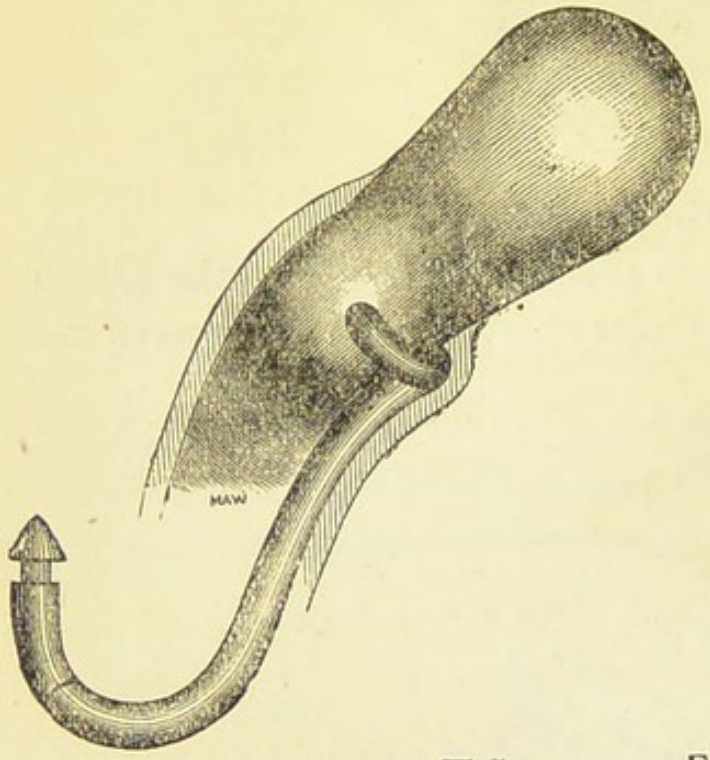


Fig. 95.—Cutter's T Stem applied.



Fig. 96.—Cutter's soft Pessary (modified by Thomas).

Anteflexion.

This most troublesome and frequent displacement involves considerations altogether distinct from anteversion. Anteflexion of the uterus may be either congenital or acquired. The body of the uterus is bent forwards over the cervix, and the axis of the cavity of the fundus uteri no longer forms a continuous and slightly curved canal with that of the cervix, but is placed at an angle, varying in degree according to the extent of the flexion. Or the cervix may be flexed forwards at various

angles (Gaillard Thomas), while the cavity of the fundus retains its normal axis; or the flexion forwards may occur both in the body and neck of the uterus, an extreme degree of angular constriction at the isthmus uteri resulting.

As Goodell rightly remarks, the lesions anteversion and anteflexion blend into one another. There frequently has been a state of anteversion prior to the flexion. In primary anteflexion this displacement may not give much trouble until after marriage, when the increased stimulus to menstruation excites a more profuse menstrual discharge, and the obstruction to its flow caused by the flexion produces



FIG. 97.—Anteflexion of Uterus (Schroeder).

dysmenorrhœa. On the other hand, it may be accidentally discovered, and should always be remembered as a likely cause of severe dysmenorrhœa occurring with the earlier periods in very young girls.

Dr. Gaillard Thomas describes cervical and cervico-corporeal flexions as those most frequently met with in nulliparous women, while the corporeal displacement is that seen in multipara. My experience would lead me to say that in practice we meet much more frequently with the corporeal than the cervical flexion. It is in cases of primary or con-

genital anteflexion that we frequently find other abnormal uterine developments—short or conical cervix, short anterior lip, small uterine opening.

Causation.—An acquired anteflexion may be induced and promoted by almost any of the influences mentioned as tending to produce anteversion. I have already referred to the importance of a free circulation at the 'axis of suspension' (Barnes) of the uterus. Any obstruction here must lead to venous congestion, congestion to interstitial effusions, 'hypergenesis of tissue' (Thomas), and hypertrophy, and as a result, either morbid growths or secondary contractions are formed. In no situation should we more naturally expect these to occur than in the anterior wall of the uterine fundus. Increase of size demands larger arterial blood-supply, and, consequently, we have, not alone greater habitual venous congestion, but the periodical determination of blood at the menstrual period adds to the general uterine derangement, and any further obstruction at this time to the free flow of blood still further increases the evil. The cycle of changes may commence either in morbid processes promoting congestion and weight in the uterine wall, or in an interruption to the circulation at the 'axis of suspension,' with consequent alteration of tissue at this part, and these conditions may be both secondary to pathological extra-uterine states, such as tumours, adhesions, inflammatory effusions, a retro-hæmatocele, or pressure from the rectum posteriorly, or from the abdominal viscera above. Or the initiatory mischief may be traced to the ovary—ovarian, with consequent uterine congestion, inflammatory effusion in the broad ligaments, adhesions of the Fallopian tubes, occasional perimetritic attacks, with a consequent dragging on both the vagina and uterus.

Symptoms.—The symptoms depend to a great extent on the degree of flexion, the size of the body of the uterus, the

accompanying stenosis, the pressure on the bladder; or such complications as metritis, endometritis, and perimetritis. Sterility being a common consequence of anteflexion, it is frequently present, with many of its attendant ills. Here, in addition to the dysmenorrhœa, there is occasionally dyspareunia, an irritable and sensitive vulvar orifice and vagina, a sensitive and congested cervix, with pain on pressure in the posterior fornix of the vagina, caused by the swollen and sensitive ovary. The pressure on the bladder brings frequent desire to pass water, with difficulty of retention; there is constantly a sense of weight and pain when the patient stands or walks for any time, and neuralgic pains occur in various parts.

Diagnosis.—This, as a rule, with the exercise of any care, is not difficult. A digital examination detects the solid body of the uterus lying anteriorly, and the angle of flexion marked by the presence of a sulcus, beneath which the cervix lies in the axis of the vagina, if it is not drawn out of position by any adhesions or cicatricial contractions. Care must be exercised, if the flexed cervix is drawn anteriorly, not to mistake the displacement for a partial retroversion or retroflexion. The uterus, occasionally in anteflexion, lies low in the vagina; the process of descent proceeding at the same time as the forward displacement.

Having so far detected the anteflexion, it is well to make a careful examination of the vaginal roof, search the anterior and posterior fornix for any contracting bands, or any perimetric effusions, while we ascertain with the finger the degree of mobility of the uterus. Still retaining the finger in the vagina, we make a careful abdomino-vaginal examination, determining the size and mobility of the fundus uteri. If doubt still exists as to whether the tumour is an intramural fibroid, or some effusion which has formed in front of the uterus, we must complete the examination with the

uterine sound. This we may find some difficulty in passing; the sound may have to be withdrawn, and a new curve given it according to the degree of flexion, before we can succeed. When we have introduced it, we can satisfy ourselves of the exact shape, direction, sensitiveness, and degree of mobility of the uterus; judge of the space between the finger and the sound, feeling the instrument through the uterine wall; at the same time we determine the length of the uterine cavity; with the hand placed on the abdomen, we may also ascertain the degree of mobility of the suspected mass. The sensation transmitted to the hand of proximity of the sound in utero, is quite different from any sensation imparted by the movement of a fibroid growth. Should we experience a difficulty in passing the sound, in a case of anteflexion, we may assist the introduction of it by pressing up the fundus with a finger in the vagina, the handle being carried well back to the perinæum. If we succeed, the sound is brought steadily, but not forcibly or too suddenly, forwards, and the fundus is raised. By such an examination as this, it is hardly conceivable that we can mistake the case of anteflexion for one of fibroid, or *vice versâ*, and overlook effusions, or any old adhesions, a vesical tumour or calculus.

Treatment.—Much of the difficulty experienced in practice in the treatment of anteflexed conditions of the uterus is due to the fact that the course pursued with encouraging success with one case completely fails with another. Cases occur in which we would expect troublesome symptoms to arise from the displacement, and yet there are none that we can reasonably attribute to it. It is better, unless forced to treat the accompanying sterility in a married woman not to interfere in such.

In fact, our conduct of the case, by local interference, will depend on—

(*a*) The discomfort caused by the flexion ;

(*b*) The extent to which the uterus will support local measures, as the introduction of the sound, occasional reposition, the use of a stem ;

(*c*) The presence of complications, as parametritis, perimetritis, endometritis, uterine fibroids, adhesions.

Every case of anteflexion must be treated on its individual merits. When we find that local manipulation is ill borne, that any inflammatory conditions co-exist, that after reasonable and judicious efforts to restore the uterus to its proper position we fail, it is better not to push our efforts to the borderland of rashness, but simply, by careful attention to the bowels, by encouraging retention of urine and rest in the dorsal decubitus, the application of the most comfortable vaginal support, and periodical reposition by the finger, to make the patient's life as comfortable as it is possible. Otherwise the two indications for treatment are clear—1st. To restore the uterus to its normal shape and position ; 2nd. To retain it by mechanical means in its proper place, while we correct the flexion and establish the patency of the uterine canal. The first indication is effected by the uterine sound, aided by the finger in the manner already described ; the second object we endeavour to accomplish by a suitable pessary, and, if necessary, the use of an intra-uterine stem to straighten the canal. The general principle of relieving local congestion, and treating any inflammatory conditions of the endometrium, or the uterine appendages, before we trust to a mechanical support, is to be observed in the case of anteflexion. Proper dilatation of the canal with bougies, incisions of the cervix, occasional depletion, the ordinary applications to the cavity of the uterus after dilatation, careful attention to the secretions, are steps that must frequently be taken, independently of the application of any pessary. In short, when the case of anteflexion presents itself, our

first duty will be to subdue any local inflammatory state; our next, to endeavour to replace the uterus and apply a pessary; then, if there be a tendency to stenosis (with dysmenorrhœa and sterility), to use dilators and dilate the canal, commencing with a small bougie, and gradually increasing. It is well to take the curve of the canal on the first occasion, and preserve an outline of this for future guidance in shaping the bougie; meantime we should, when it can safely be done, at periodical intervals of some days, gently retrovert the uterus with the sound, replacing the pessary while the uterus is thus retroverted. But the step that in these cases gives frequently the most relief is section of the cervix uteri.

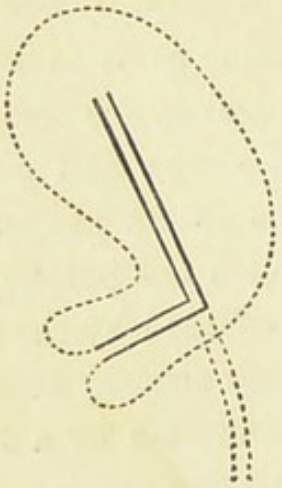


FIG. 98.—Sims's Operation for creating New Uterine Axis.

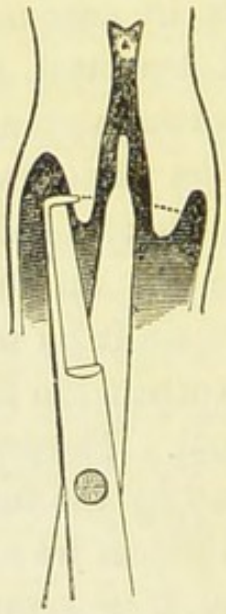


FIG. 99.—Bilateral division of the Cervix with Kuchenmeister's Scissors.*

and more especially the posterior incision advised by Marion Sims.

For practitioners not accustomed to much uterine surgery, incision of the posterior uterine wall is the safest and simplest step, and Kuchenmeister's scissors is perhaps the most convenient instrument to use. If the incision is made

* See page 80.

with it, the probe point of the scissors should be introduced for about three-quarters of an inch, and the cervix divided not quite up to the vaginal reflection.

If we incise the cervix and os internum with Sims' knife, which is the best instrument we can use, the operator having it directly under his control, we proceed as follows :

The patient is placed in Sims' position, and the cervix brought well in view and held securely by a tenaculum. The blade of Kuchenmeister's scissors is next introduced (the canal of the cervix may, if necessary, be dilated previously), and the posterior cervical wall is partially divided, as has been just described ; Sims' knife is now taken and introduced through the internal os, and the posterior cervical wall is laid open. If any shoulder exists on the anterior wall (Emmet), the knife should be directed to this, and it should be incised. Every precaution, already insisted on when referring to division of the cervix for malformations and stenosis, has to be taken. There is a certain percentage of risk in all such operations. Were all the untoward results published, we should not have 'cutting the cervix' spoken of so lightly and flippantly as it frequently is. To prove the necessity for taking proper antiseptic precautions, both before, during, and after such operations, I may briefly refer to the following case.

A few years since a patient was admitted under my care into the Women and Children's Hospital in Cork ; she was suffering from sterility, dysmenorrhœa, and anteflexion. I determined to perform Sims' operation, which, after due preparation, I did. She recovered without an untoward symptom, and was brought into the hospital surgery for subsequent dressings, as I was keeping the incision open preparatory to the use of a glass stem. She had arranged the day for her departure from hospital. Suddenly, on the twelfth day after the operation, pain and vomiting set in,

apparently without any cause. I was sent for. She complained of slight sore throat, great uterine pain, and there was general distress. A servant was taken suddenly ill in the hospital on the same day, and two children were removed to an isolated room for a suspicious eruption that suddenly appeared. These children and the servant developed scarlatina, and had to be removed. The origin of the attack was afterwards clearly traced to friends who had come from a house in which there was scarlatina, and who were visiting in the hospital. My patient suffered from all the symptoms of puerperal peritonitis, with septicæmia, and ultimately died. The case teaches its own lessons. The smallest detail in the after-treatment should not be neglected, and the patient must be protected from any accidental contact with septicæmic influences.

Pessaries.—Any of those used for anteversion may be used to retain the uterus in position in anteflexion. It will be found most convenient in practice to acquire the habit of moulding the pessary we require from different-sized celluloid rings; from these we can construct a cradle, a modified Gehrung's, or any desired shape of Hodge's pessary. Dr. Gehrung, of St. Louis, has devised a special pessary, which will be found useful in both anteversion and anteflexion. Dr. Goodell speaks most favourably of it. I take the following description from his 'Lessons;' it is quoted from Dr. Gehrung:

'Place the pessary on a table, the superior convex arch S below, the inferior concave I above, the curves R and L pointing toward you. Then take hold of the curve L, now pointing to your right, with the right hand, and insert curve R into the vagina to the right of the patient, until three-fourths of the instrument are buried within. Now make it turn on point R as on a pivot, by pushing up curve L towards the fourchette and the left side of the patient; so that, at

the same time that curve L slips into the vagina, the arch S will turn upward under the body of the womb, and the



FIG. 100.—Gehrung's Pessary (Goodell).

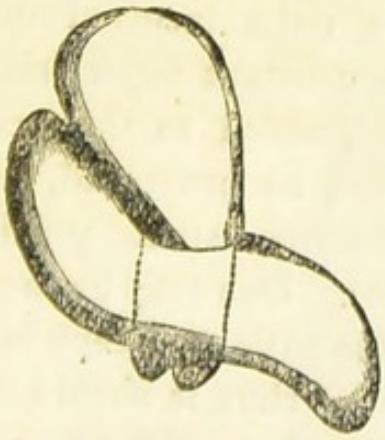


FIG. 101.—Hurd's Pessary applied in Retroflexion.

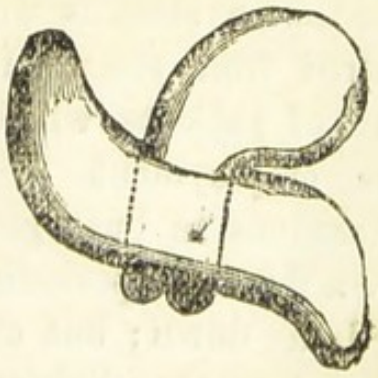


FIG. 102.—Hurd's Pessary in Anteflexion.

arch I downward towards the os pubis. This being accomplished, the womb will turn to the normal axis; if it should

fail to do so, use the pessary as a repositor by pressing the arch I upwards.'

Figs. 101, 102 show Hurd's pessary, applied both in retroflexion and anteflexion, with its central opening to receive the cervix uteri. 'It passes as readily,' says Thomas, 'into the vagina, when greased, as the cylindrical speculum does, and the cervix slipping into its canal, is held as if in splints, and thus bent backwards. There is no pessary with which I am acquainted that answers this function so well. It answers excellently in all cases save those which belong to a most incurable class of anteflexions, namely, those *where the vagina joins the cervix very near the os externum.* In these the cervix cannot project into the canal, and hence the splint-like action of the instrument is not developed.' A Hurd's pessary of such a size should be chosen as will not incommode the cervix.

Intra-uterine Stems.—I have said little of intra-uterine stems in the treatment of anteflexion, for two sufficiently good reasons—1st. The cases are rare in which, with judicious management, they are required, and when the flexion is such that a stem is indicated, it will be found in practice that the chances are about equal between success and failure from its use. 2nd. The risks incurred during the time a stem is worn, and the constant supervision required from the medical attendant, added to the carelessness of patients, which cannot often be prevented, render the employment of an intra-uterine stem peculiarly hazardous in busy general practice. One may be inserted for a few days periodically while the patient is kept in bed, or lying down; but even when used thus it should be removed on the slightest sign of irritation. Though I have frequently employed intra-uterine stems in my own practice, without any bad result, and often with marked benefit, still I have always had a feeling of uneasiness during the

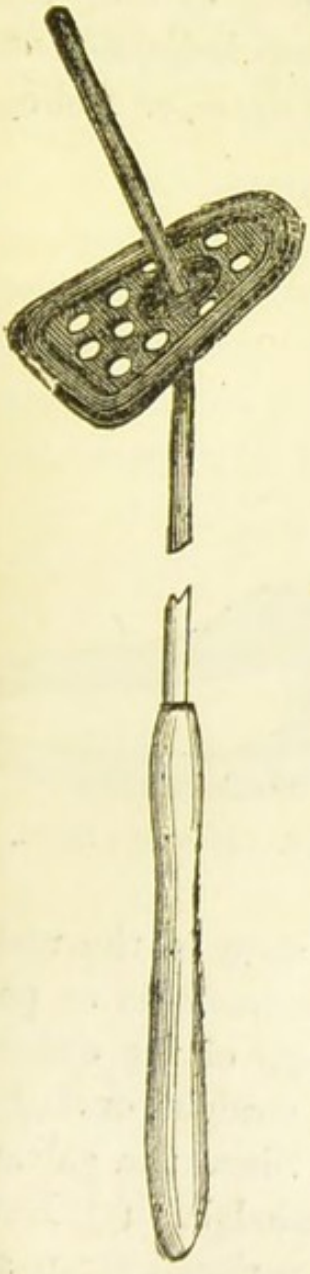


FIG. 103.—Dr. Wynn Williams' Stem.

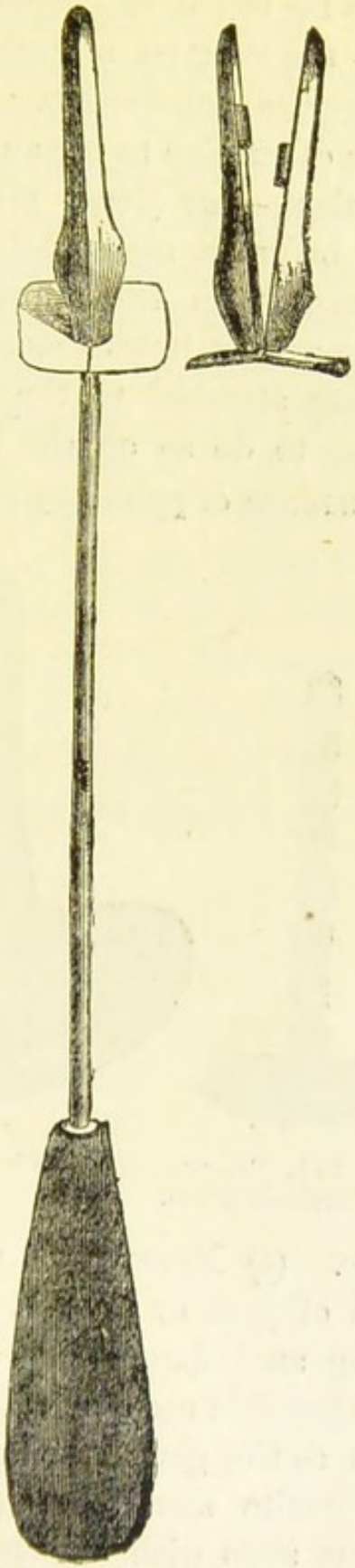


FIG. 104.—Chambers' Stem and Introducer.



FIG. 105.—Dr. Bantock's gilt Stem.

time the stem was *in the uterus*, and have ever accompanied its application with the strictest injunctions to the patient regarding rest and medical supervision. The precautions to be adopted when we determine to use an intra-uterine stem in anteflexion, are these—(*a*) Never place a stem in the uterus immediately before a menstrual period, and when one is worn, remove it on the approach of a period. (*b*) Always teach the patient how to remove the instrument by means of a string attached to the lower end of the stem, and direct her to do so on the least indication of uneasiness, the occurrence of pain, any chilliness, or feeling



FIG. 106.—Thomas's Cup and Stem.



FIG. 107.—Peaslee's Stem.

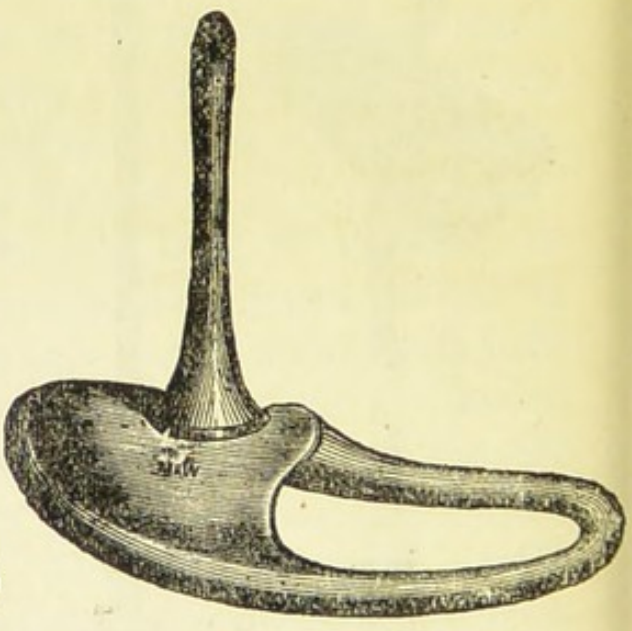


FIG. 108.—Hewitt's Stem.

of general malaise. (*c*) Never place a stem in the uterus if there are signs of past or present perimetritis or parametritis, or during an inflammatory state of the endometrium. (*d*) When possible use a smooth, straight, or slightly curved stem, such as the glass stem of Sims, the galvanic stem, or the vulcanite stem of Greenhalgh. (*e*) Never use an intra-uterine stem with external perinæal strap and support. (*f*) The stem should not reach the fundus of the uterus.

A diverging stem such as that of Dr. Bantock, which is gilt, can be introduced closed, as shown in the figure. (Fig. 105.) Or the cup and stem pessary of Thomas may be used. The vulcanite stem is supported in a cup fixed between the limbs of an anteflexion pessary. (Fig. 106.) Dr. Graily Hewitt's useful stem pessary for anteflexion is a combination of a Hodge's pessary with stem (Fig. 108). Dr. Wynn Williams has contrived a stem pessary which is as simple and safe as any other. The stem is supported on a modified Hodge, which is covered with a diaphragm of perforated indiarubber, in the centre of which is a cup to receive the bulb of the stem. (Fig. 103). The stem is first introduced on a tent-introducer, and the Hodge is then guided to its position over the handle of the introducer, the bulb being received into the cup. Fig. 107 represents Peaslee's vulcanite pessary. It has not such a tendency to slip out of the uterus as the smooth kind, and it can be applied with any modification of Hodge's or Smith's pessary.

CHAPTER X.

UTERINE DISPLACEMENTS—RETROVERSION AND RETROFLEXION.

By retroversion we understand a displacement of the fundus uteri backwards, so that it lies towards, or on, the rectum, while the cervix uteri is directed forwards towards the pubis. This inclination occurs in varying degrees, from a slight backward version to an extreme displacement, in which the os uteri is thrown upwards and forwards, and the body of the womb downwards and backwards. I am not here referring to the retroversion of pregnancy.

Causation.—Everything that tends to relax the uterine supports, to increase the size and weight of the uterus, to weaken the uterine wall, to soften and congest the tissues, to diminish the natural pelvic support of the uterus inferiorly and posteriorly, or to drag the uterus backwards by adhesion or contraction, contributes to the production of retroversion. We thus find it frequently associated with pregnancy, laceration of the cervix, subinvolution, uterine fibroids, metritis and endometritis, rectocele, atonic or prolapsed vaginal wall, ruptured perinæum, adhesions, sedentary and standing occupations, neglect of the bladder. Retroversion is met with far more frequently in married women, and those who have borne children, than in the nulliparous. This we might anticipate from the occurrence of subinvolution and chronic hyperplasia, and laceration of the cervix and perinæum, as frequent consequences of

labour. In women who have had several pregnancies, and after severe labour, we find these results complicated by atonic and relaxed, if not prolapsing, vaginal walls. This likewise predisposes to retroversion. In these days of tight-lacing and contracted waists, when a fashionable woman's estimate of an accoucheur's skill is measured by the tightness of a binder, and the narrowness of her waist after labour, retroversion is occasionally encouraged, if not produced, by unnecessarily tight squeezing and binding.

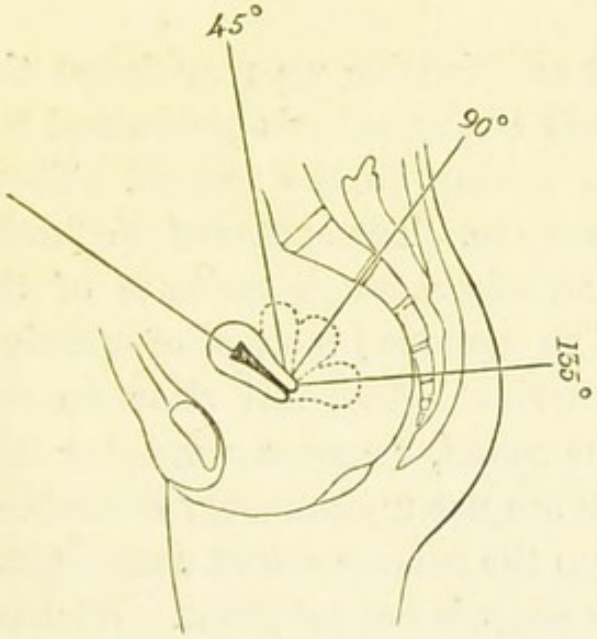


FIG. 109.—Degrees of Retroversion (Schroeder).

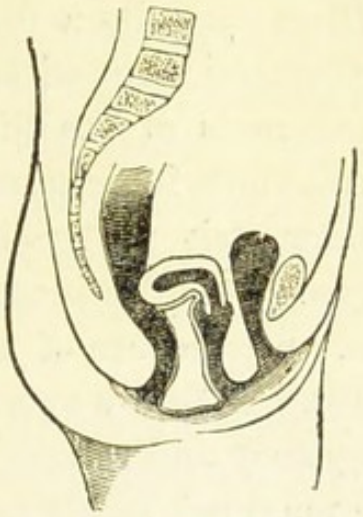


FIG. 110.—Retroflexion (adapted from Schroeder).

Symptoms.—These are the general symptoms of retroversion, pelvic discomfort, rectal and bladder pressure, distress in standing or walking, pain in the back and during defæcation; but the gravity of the symptoms arising from retroversion or retroflexion has no definite relationship to the extent or severity of the displacement. We find the symptoms aggravated in mild cases, and at times, almost absent in those in which we would expect to find considerable distress. Should an acute retroversion occur, which is rare, then the symptoms are generally very severe :—great

pain, tendency to collapse, inability to stand, are amongst the most prominent. When retroversion has existed for some time, symptoms arise which are the secondary consequences of the pathological changes induced by the version, and by the continued pressure on the rectum and bladder: dysmenorrhœa, menorrhagia, sterility, cystitis, and rectitis. Should conception occur when the womb is retroverted, or should it be displaced during the early weeks of pregnancy, it is not unusual for abortion to happen from the third to the fourth month, when the uterus enlarges, and the irritation and distress increase.

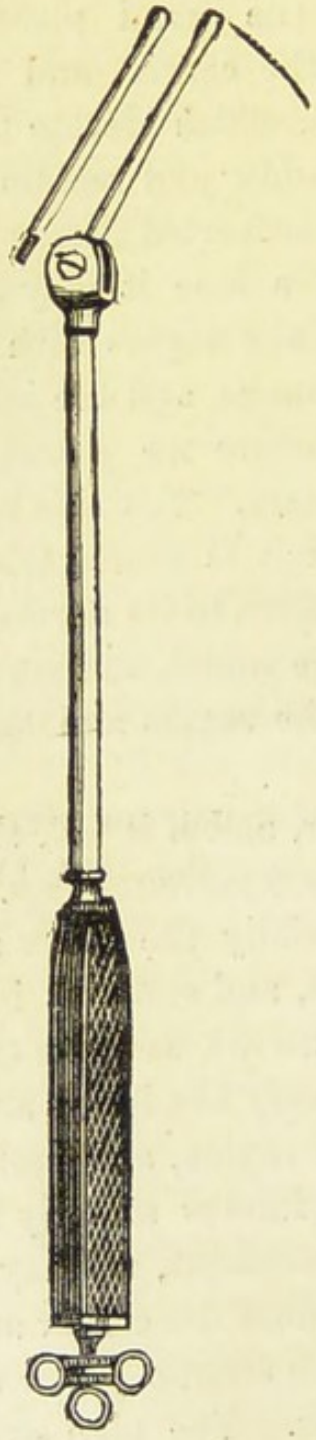
Diagnosis.—By a digital examination we may detect the cervix uteri directed towards the symphysis pubis, and the round mass of the fundus resting on the rectum. These signs at once indicate retroversion. The extent of the fundal tumour, felt posteriorly, affords a rough measure of the degree of displacement. The combined method of examination, and the use of the uterine sound, will clear up any doubt. Before we pass the sound, we must remember that pregnancy and retroversion are not uncommonly coexistent. We must not rashly take up the uterine sound until we can satisfy ourselves that the woman is not pregnant. We have to beware of the error of mistaking a fibroid tumour in the posterior wall of the uterus, a hæmatocele, an effusion (either cellular or peritoneal), for the retroverted or retroflexed uterus. The history of the case, the conjoined examination, the uterine sound, and reposition of the uterus, should prevent this error. Yet I have known scybalæ in the rectum and cellulitis more than once mistaken for retroversion.

Treatment.—Our first duty is to replace the uterus. In all first efforts to effect reposition, it is best, whether in a couch or in bed, to place the patient in the semi-prone position. If there is still difficulty, let the woman be put in the knee-pectoral position, her chest being brought well

down on the couch, and advantage taken, at the moment of reposition, of a strong expiratory effort on the part of the patient. In some cases, counter-pressure may be made in the dorsal position, between the hand placed on the abdomen, which presses down the cervix, and the fingers of the other hand, in the vagina, which elevate the fundus. In all these manipulations the bladder and rectum should be empty. At times we find the retroverted uterus congested, tender, and sensitive. In such a case it may be well to combine periodical reposition by the fingers with occasional depletion, the use of the hot douche, and the introduction of a glycerine plug at night, before we permanently replace the uterus and apply a pessary. But this necessity is rare, and the safe rule is, 'when it is practicable to do so without much force, restore the uterus to its normal position, either by the fingers or the uterine sound, and apply a lever-pessary adapted to the size of the vagina and the cervical development of the uterus.'

The best repositor is the finger, and if it fail, the uterine sound. Both Sims's and Bantock's repositors (Figs. 114, 115) are ingenious instruments—especially the latter; but the sound is the safest, most effectual, and simplest instrument for practitioners. To replace the uterus, we place the patient in the semi-prone position, and carry the index and middle fingers of the left hand into the vagina, and resting these against the uterus, we press the fundus steadily forwards. Should this not rectify the displacement, we may rest the index-finger of the right hand against the cervix anteriorly, and press it backwards towards the sacrum. We will often succeed by alternating these efforts. The plan strongly recommended by Dr. Thomas is as follows: 'The operator then lubricating the middle and index fingers of the right hand, introduces them to the fundus, he standing at the patient's back and facing her head, the palmar surface of the fingers

being directed to the rectum. The body of the uterus is lifted upon the inner surface of the fingers until it becomes erect, then their dorsal surfaces, which will readily be the backs of



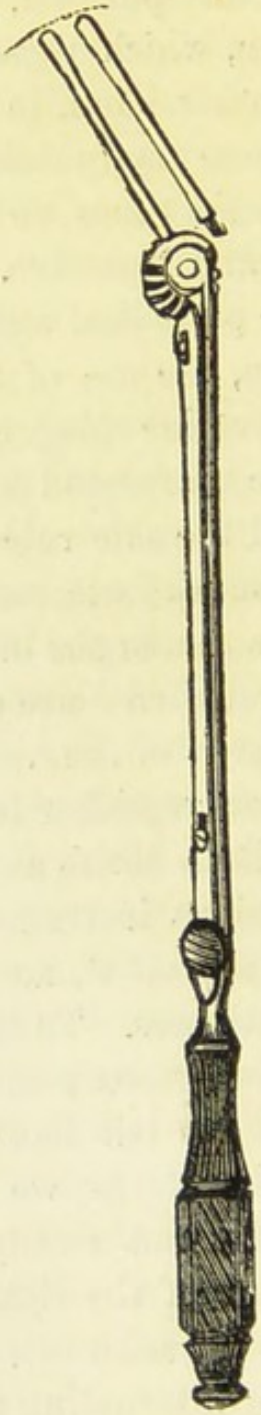


Fig. 111.—Bantock's Repositor. Fig. 112.—Sims' Repositor.

the nails, are made to push therefrom over into the normal position.' We will readily succeed in reducing, by the fingers, a retroverted uterus when the woman is placed in

the knee-and-elbow position. This latter postural plan should always be tried before we use any force with a repositor.

We can exert greater power with the fingers introduced into the rectum, directing the pressure against the fundus, while the woman is in the knee-and-elbow posture. I have never seen any harm accrue from judicious attempts to replace the uterus with the sound. This outline diagram (Fig. 116), modified from the excellent work of Drs. Hart and Barbour, shows the method of rotating the sound, and the sweep given to the handle during reposition.

Having introduced the sound, the roughened face of the handle being directed backwards, the operator takes it lightly in the left hand, and carries it, with a gentle sweep, upwards and forwards and to the right, while the handle is made to describe a semicircle, and the intra-uterine portion of the sound is thus gently rotated on its axis, and finally the handle is carried well back to the perinæum. That the uterus may, through the presence of adhesions, resist all attempts at reposition, is not to be forgotten. To an experienced hand, the degree of resistance, both to finger and sound, indicative of such an impediment, is readily discernible; but this is not so in the case of an inexperienced hand, and therefore all the more care must be exercised by beginners in using the sound for the purpose of replacement.

When the os uteri is directed very far forwards we may not be able to introduce the sound in this manner. The handle may have to be directed well forwards under the pubes, and, when introduced, the fundus must be first partially raised by pressing on the centre of the sound with the finger of the right hand, before the rotatory sweep is made with the left. The sound is not to be introduced, and simply rotated on its axis.

Should a flexion complicate the displacement, the sound must be introduced curved according to the degree of flexion. We may not be able to straighten the uterus. The same caution must be exercised, and the same means adopted,

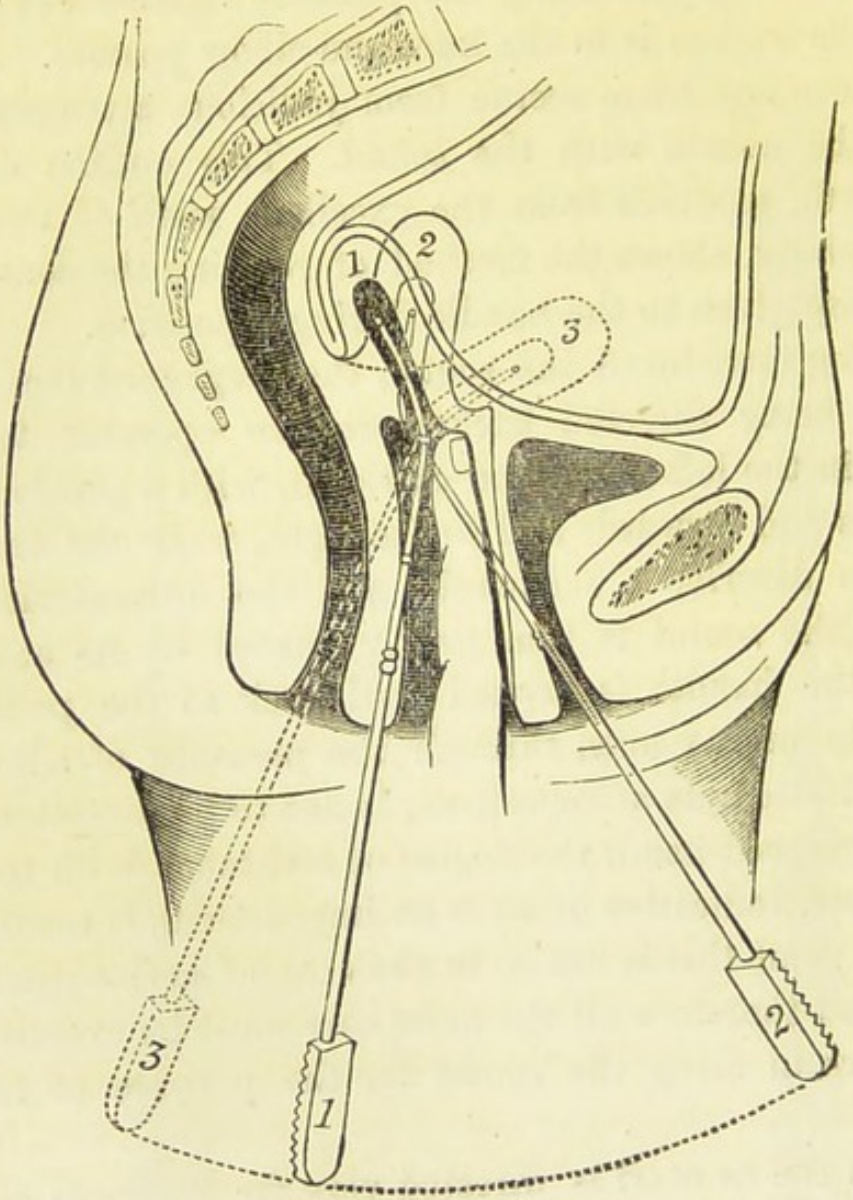


FIG. 113.—Showing rotation of Sound in Retroversion (adapted from Hart and Barbour).

as in the case of anteflexion. Any previous inflammatory condition has to be controlled. The uterus may be partially straightened by the uterine sound, and still more so by conjoined recto-vaginal manipulation—the index finger of the right hand in the vagina pressing downwards and back-

wards the cervix, while the index finger of the left in the rectum presses steadily upwards and forwards the fundus. The manœuvre may be effected both in the dorsal and the knee-elbow position. (See 'Retroflexion.')

When we have succeeded in replacing the womb, our next object is to retain it in its normal position. For this purpose we select a pessary. In those cases in which there is tenderness and sensitiveness, it is well to prepare the patient by the application, three times in the week, of an antiseptic tampon of salicylic acid wool soaked in glycerine, which is pressed up into the posterior fornix of the vagina, so as to push forwards the fundus; while by a second tampon, applied below and in front of the cervix, this latter is pushed back; the superior plug is thus assisted in its action on the fundus. Both plugs are finally retained in position by a roll of antiseptic wool, which is passed into the vagina.

For the same object Thomas advises the use of a sponge-pessary. The sponge is attached to the stem of a Cutter's pessary, and it is pushed well up into the posterior vaginal cul-de-sac. Sponge, however, is always an objectionable substance to leave in the vagina, and its employment can seldom be necessitated in practice. If a case of retroversion resists the application of a pessary, the one lesson every prudent practitioner has to learn is patience. By the daily practice of the abdominal decubitis, local measures directed to reduce congestion or inflammation, habitual reposition, and the education of the vagina and uterus to the presence of a well-fitting pessary, we will ultimately conquer. As Dr. Gaillard Thomas well remarks: 'Some of the most gratifying results in gynecology will be found to arise from a cautious, patient, and philosophical treatment of these cases.'

There can be no doubt that the pessary, the principle of which is capable of adaptation to most cases of retroversion,

let the particular form or modification of the appliance be what it may, is Hodge's lever-pessary. I wish to quote here Dr. Goodell's remarks in describing the lever action of this support:

'As its name indicates, this pessary acts on the principle

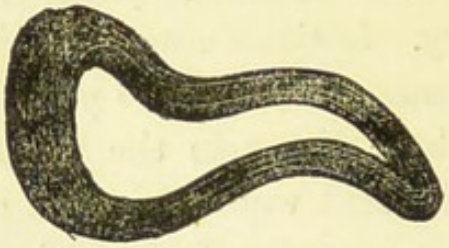


Fig. 114.—Thomas's modified Smith-Hodge.

of a lever; but the mechanism of its action is twofold. By stretching the vagina upward and backward, it draws the cervix in the same direction. The womb then turns on its

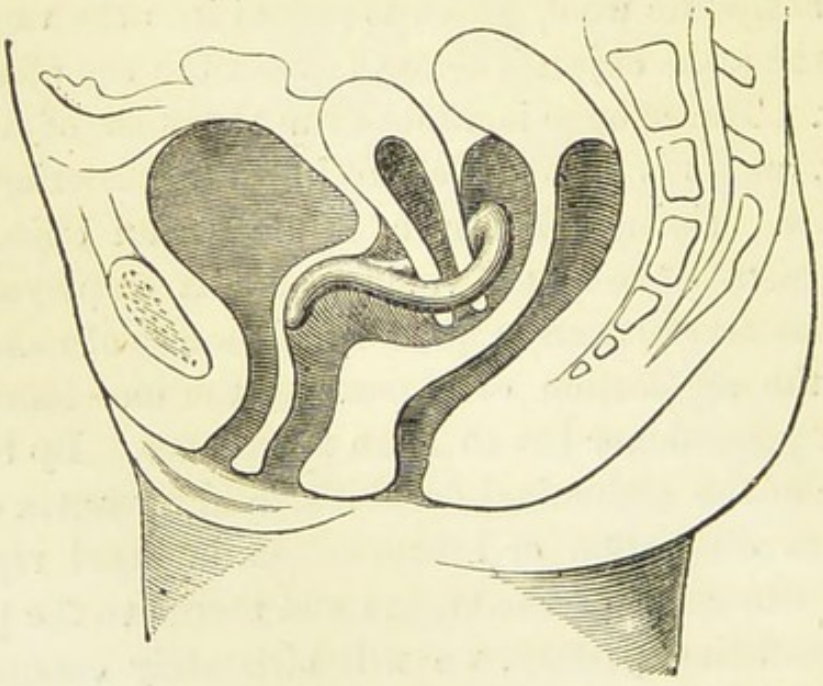


Fig. 115.—Smith-Hodge Pessary in position (after Goodell).

central point of ligamentous attachment as on a fixed pivot, and the fundus is consequently tilted forwards. The womb itself thus becomes a lever, of which its point of attachment to the bladder is the fulcrum. The power is applied to the cervix, and the fundus becomes the weight, or resistance.

This action remedies retroversions, but not retroflexions, unless complicated with retroversion, as they usually are. Then, again, the pessary itself acts as a lever. The anterior vaginal wall, with the visceral pressure above it, now becomes the power applied to the lower limb, or "long arm," of the lever; the posterior vaginal wall is the fulcrum, or support; and the upper limb, or short arm, lying behind the cervix, directly pushes the weight, or fundus uteri. This action tends to remedy both retroflexion and retroversion. For instance, during the act of inspiration the descending diaphragm crowds down the abdominal viscera upon the bladder, to which are attached the cervix uteri and the anterior wall of the vagina. These organs, therefore, descend. As a result, the lower or fore end of the lever is necessarily pushed down by the descending anterior wall of the vagina, on which it rests, while its upper or hind end proportionately rises up and tilts forward the retroverted or the retroflexed fundus. In expiration, the reverse takes place. The pressure is, therefore, not a steady one, but a gentle rocking one, which is the most efficient of all. This, also, is the one least liable to inflict injury on the soft parts, because the points of pressure are varying ones. But to attain those ends the pessary must be mobile, *and never so long as to put the vagina on the stretch; otherwise it loses its distinctive character of a lever, and degenerates into an ordinary ring pessary. It should further impinge on the soft parts only, and take no bearings on the solid structures of the pelvis.* . . . Such a firm basis of support was not intended by the inventor, and his pessary, as well as Smith's pessary, always acts best when the lower bar presses on the soft and yielding anterior wall of the vagina, instead of on the pubic bones.'

I have italicised some sentences of Dr. Goodell's, as I consider the points insisted on by him of such importance to those

who would rightly apply a Hodge's pessary. Figs. 82-86 and 114 represent Hodge's pessary, and some different modifications of it, which will be found useful in practice, as the

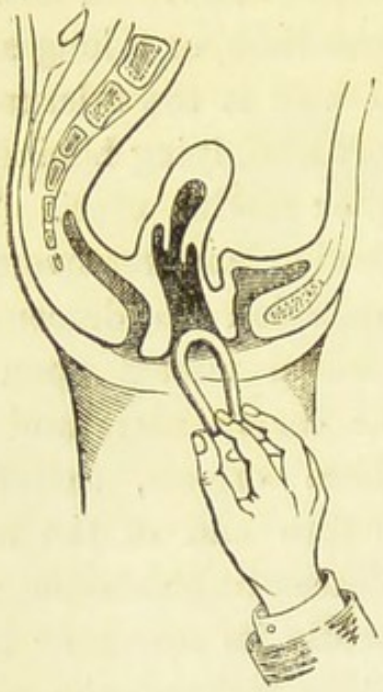


FIG. 116.—First step of introduction.

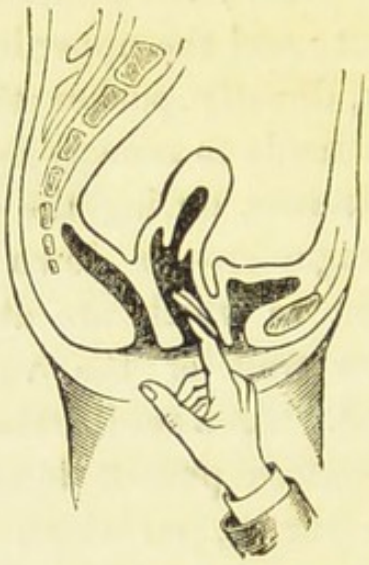


FIG. 117.—Second step of introduction.



FIG. 118.—Pessary in position.

cross bars of Greenhalgh, the retroversion curve of Thomas, the pubic curve of Smith, and the incomplete Hodge. To introduce a Hodge's pessary, bring the woman, on her back,

well to the edge of the couch or bed, with the knees well drawn up. The pessary is now taken in the right hand, while the labia are held lightly apart with the fingers of the left, at the same time that the perinæum is pressed in a downward direction. The pessary, with its uterine or longer end in a line with the vulvar orifice, is now passed into the vagina, the principal pressure being directed on the perinæum; when the pessary has completely passed the vulva, the fingers of the right, or conducting hand, are changed so as to turn the pessary half round on its long axis, thus bringing the concavity of the large curve to point forwards to the anterior vaginal wall. This is the moment of greatest pain to the woman, and any bungling in rectifying the position of the pessary, as it lies pressing on the front of the cervix, causes still greater discomfort. The index-finger of the right hand is therefore quickly transferred to the upper bar of the pessary, which is hooked or pressed down, so as to glide over the cervix into the vaginal cul-de-sac behind. The pessary is now carefully explored, its relation to the cervix ascertained, the degree of tension of the vaginal roof felt, and the exact position of the uterus determined, before we permit the patient to rise. It is well always to explain to the patient, or friend, the exact position of the pessary in the passage. If uneasiness should follow, we should instruct her how to remove it, by pulling, not too forcibly, on the lower bar, and by turning the instrument on its long axis and gently withdrawing it.

Figs. 116, 117 show the method of introducing, and Fig. 118 the Hodge pessary in position.

Every practitioner must be ready to mould and shape the lever he requires for each individual case, either from a vulcanite Hodge or celluloid ring. I strongly recommend this latter ring for everyday practice; it is easily given any shape on heating. Messrs. Maw have made for me these cellu-

loid rings of a larger size, with a thicker cushion of celluloid for about one-sixth of the circumference of the ring; we can thus readily construct pessaries with any shape or curve we see fit, and we can convert them into a cradle, or any form of Hodge.

Of the many other varieties of pessary, it is only necessary to mention Thomas's modification of Cutter's pessary with external support (Fig. 119), and the retroversion pessary of Thomas himself.



FIG. 119.—Cutter's Retroversion Pessary.

RETROFLEXION.

In retroflexion, the fundus is bent backwards on the cervix, and lies against the rectum. Retroflexion may be a congenital affection, due to arrest of development of the posterior uterine wall, and may remain undetected, even after puberty. In practice, however, we have nearly always to treat that displacement which is secondary or acquired.

Causation.—We may refer to the causes of retroversion when we inquire into those which are productive of retro-

flexion. It is not difficult to understand how the uterus, yet softened and enlarged after pregnancy, with strained and relaxed ligaments, or with the perinæal support injured and weakened, may, while it is in a state of subinvolution, yield to abdominal or pelvic pressure, and bend at the axis of suspension. And in those cases in which there is an enlargement in the posterior wall, either as the consequence of congestion or hypertrophy, or an intramural fibroid, we can readily understand the occurrence of retroflexion. The flexion is, as a rule, preceded or attended by version. The resulting contraction in the uterine canal leads to stenosis, and obstruction to the menstrual flow; while the consequent congestion of the uterine tissues in the fundus, and the increase of weight, still further encourage the tendency to uterine prolapse and flexion. As in anteflexion, cause and effect react on each other; the longer the displacement lasts, the worse it becomes, the larger the uterine fundus, and the more acute the angle of flexion.

Diagnosis.—In examining with the finger the retroflexed uterus, these two signs immediately are detected by even an inexperienced hand—the os uteri is at once reached, occupying almost the vaginal axis, while the fundus is found as a solid mass filling the posterior cul-de-sac, and a well-defined sulcus separates the cervix from the fundus. The flexion is distinctly traceable with the finger. We confirm the diagnosis by both rectovaginal and uterovaginal examination. Carrying the index-finger of the left hand into the rectum, we feel the fundus through the rectal wall, and encroaching on it; with the finger of the right hand on the cervix, we can draw on the uterus, and so detect the mobility of the tumour and the conjoined movement of the cervix and fundus. It is only in those comparatively rare cases where the uterus is enlarged and fixed by adhesions or recent effusions that any doubt can exist after a careful vaginal

and bimanual examination. To confirm our diagnosis, we pass the uterine sound, but in doing this, we must exercise even greater caution than in retroversion. The difficulty will depend in a great measure on the degree of flexion. The sound must be well curved, corresponding to the curve of the uterine axis; the handle is taken lightly in the right hand, with the concavity of the instrument directed forwards and guided by the finger of the left hand, the knob is introduced as far as the internal os; by a *tour de maître* the direction of the sound is reversed, the concavity being directed backwards, and the handle carried well forward towards the pubes. Assistance can at the same time be given to facilitate its passage into the uterus by raising the fundus with the finger of the left hand in the vagina. In those cases in which the os is directed first forwards and is high in the pelvis, the sound must be introduced with the concavity turned towards the sacrum.

Treatment.—All that has been said in regard to the management of retroversion applies with equal force to retroflexion. A suitable pessary has to be inserted when the uterus is replaced and the curve rectified. In the retroflexed womb, however, there is the flexion in addition to be corrected. The sound may have to be periodically passed, or a stem-pessary worn. If we determine to use an intra-uterine stem, we have to bear in mind all the precautions (p. 162) to be taken both before introducing the pessary and during the time it is worn. The plan recommended by Schroeder is a safe one—to place the stem for the first few days in the retroverted uterus, and not to attempt replacement until it has been thus worn for a little time. Any of the stems before described may be selected. When we have replaced the uterus, we must endeavour to retain it in position by some of the forms of pessary recommended for retroversion — more especially

Cutter's (with external support), or Thomas's retroversion, or a Hodge suitably moulded to support and press forward the fundus. The question naturally arises,—What is to be done to relieve the patient in those unfortunate cases in which rectification of the displacement is impossible, and the retroflexion is incurable? Here, as in the opposite state of anteflexion, all that we can hope to do is to palliate. Much relief may be obtained from the use of a soft rubber ring to steady and fix the uterus, or one of Greenhalgh's modifications of Hodge, with a few of the centre bars removed, while the soft pessary is moulded to suit the case.

We must insist on careful attention to the rectum and the frequent emptying of the bladder. Occasional depletion, and the use of the warm douche, are indicated if there be congestion and uterine sensitiveness. Considerable relief may be given by sustained dilatation of the cervical canal and bilateral incisions of the cervix, especially if there be dysmenorrhœa.

CHAPTER XI.

PROLAPSUS.

By prolapse of the uterus we mean a descent of the uterus in the pelvis; this descent is attended by relaxation of the vaginal walls, prolapse, and frequently inversion of the vagina itself. The bladder is involved according to the degree of the prolapsus. If the uterus passes outside the vulva, we may have an accompanying cystocele or rectocele, both bladder and rectum being dragged on by the descending uterus and vagina. The prolapse is generally divided into three stages: in No. 1, the uterus lies entirely within the vulva; in No. 2, it makes its appearance outside the vulva; in No. 3, it is protruded entirely outside the vulvar orifice. These two latter stages are also styled 'procidentia.' The influence exerted by the vagina and perinæum in supporting the uterus in the pelvis has been already referred to, as well as the part taken by the utero-sacral and other pelvic ligaments in the suspension of the uterus from above. Three pathological conditions we would then expect to find associated with and contributing to prolapse:—relaxation of the pelvic ligaments, atonicity of the vaginal walls, and weakened or absent perinæum. But further descent of the uterus necessarily means version. As the heavy uterus descends, the fundus yields to the abdominal pressure, and is directed or forced backwards, and thus a state of retroversion ensues.

The displacement, on the other hand, may commence

with retroversion or anteversion of the uterus—commonly the former; or the descent of the womb may be consequent

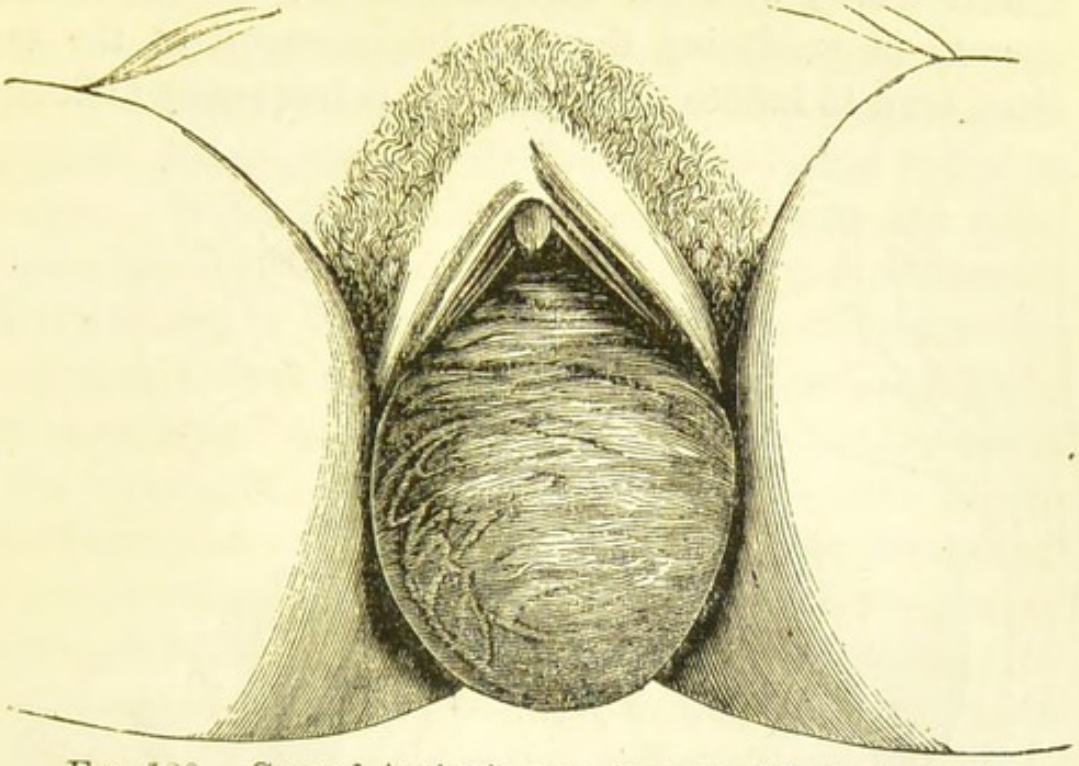


FIG. 120.—Case of Author's, complicated with Cystocele.*



FIG. 121.—Showing gradual descent of Uterus (Thomas).

upon a positively prolapsed condition of the vagina. It is rare to see a well-marked case of prolapse of the uterus in

* This drawing was taken of a case reported by me many years since; the dissected tumour, with the genital organs attached, was exhibited by me at the Cork Medico-Chirurgical Association, and published in the *Dublin Quarterly Journal of Medical Science*. The appearances corresponded exactly to the section seen in Fig. 122 taken from Schroeder.

which there is not accompanying vaginal prolapse, which, in the great majority of instances has, I believe, occurred synchronously with the uterine descent; the causes which operate in producing the one displacement, at the same time, tend to induce the other. It is frequently difficult to

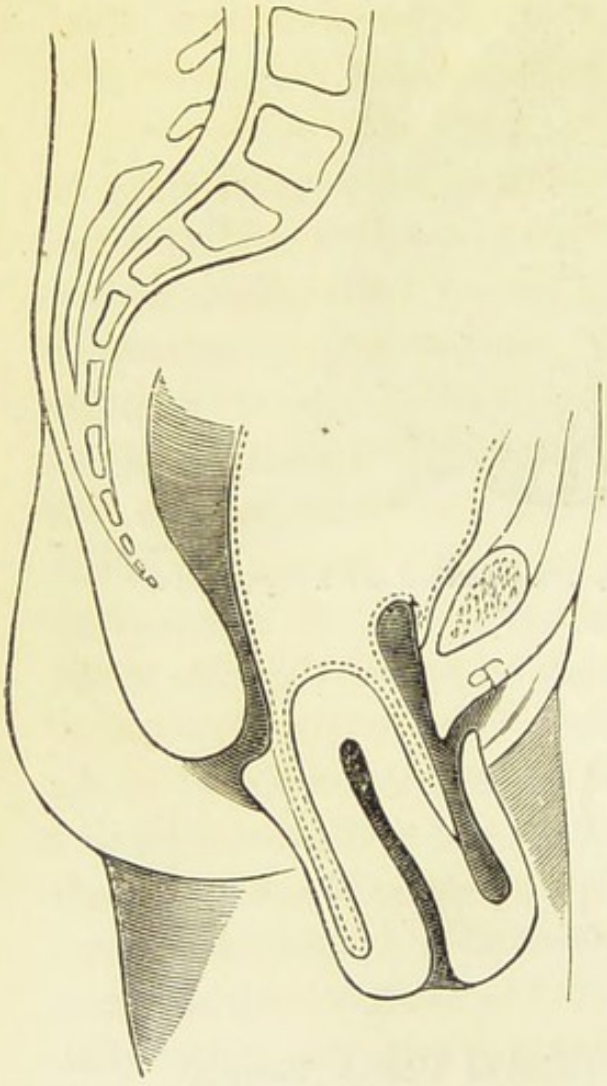


FIG. 122.—Prolapsus with Cystocele (after Schroeder).

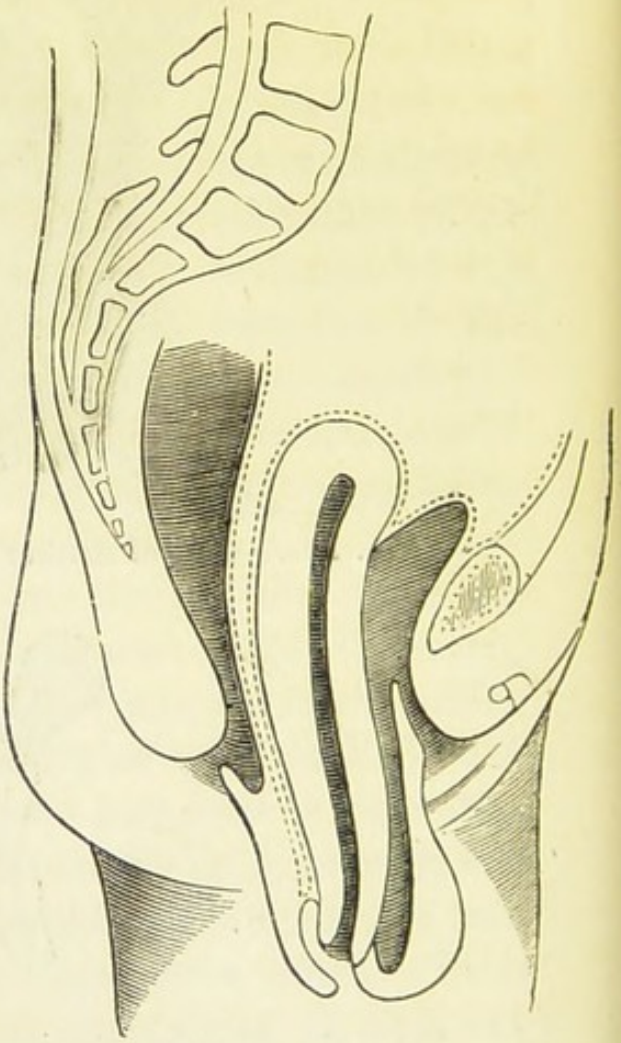


FIG. 123.—Hypertrophic elongation of Cervix (Schroeder).

These drawings are placed side by side so that the two conditions, prolapsus and hypertrophy, may be compared.

say whether on the vagina or uterus these causes have first taken effect. The uterus descends in the vaginal axis, and gradual inversion of the vagina accompanies its downward progress. The entire organ becomes congested, and, as a

consequence, there is general hypertrophy both of the supra and infra-vaginal portions. But this hypertrophy is generally greater in the infra-vaginal portion of the cervix, which is seen thickened and elongated. This hypertrophic condition of the cervix, both supra and infra-vaginal, is an important factor amongst the causes producing complete prolapse. If we thus take, in their sequence, the usual pathological events which operate during the occurrence and completion of the prolapsus or procidentia, they would be much as follows: (1) relaxation of or deficiency in the uterine supports; (2) retroversion of the uterus; (3) descent of the uterus; (4) partial prolapse of the vagina; (5) incipient inversion of the vagina; (6) incomplete prolapse of the uterus, with descent of the bladder, and possibly of rectum; (7) during the occurrence of the processes 4, 5, 6, enlargement of the uterus, with hypertrophy of the supra and infra-vaginal portions of the cervix, and eversion of the lips of the os uteri; (8) further inversion of the vagina, with protrusion of its anterior wall, and thickening of the mucous membrane, which gradually becomes hard, and, it may be, eroded in parts; (9) complete prolapse of the entire uterus and inverted vagina, both now altered by exposure and friction.

Causation.—The common predisposing causes are:—pregnancy; deficient or absent perinæum; laceration of the cervix; uterine tumours, abdominal tumours; uterine hyperplasia; imprudent clothing; advancing age; 'too roomy' pelvis; constant standing and the raising of heavy weights; accident or shock; severe labour, in which instrumental delivery has been necessary. In women who have borne many children, especially in advancing years, we occasionally find all the pelvic supports weakened, the ligaments enlarged, the vagina having a tendency to prolapse, the perinæum deficient in vital tone, and the sphincter-vaginal muscles also weakened.

Laceration of the cervix, as a consequence of labour, has its usual attendants—enlarged uterus and deficient perinæum. Both uterine tumours and uterine hyperplasia cause increase of weight of the uterus, and so tend to prolapse. Pressure directed on the uterus from above, either from some abdominal tumour, or from the more common source—tight clothing and heavy garments—pushes downwards the uterus and induces prolapse. Great exertion, necessitating fixation of the diaphragm and straining efforts of the abdominal muscles, when continued for a length of time in some laborious occupation, brings a general weakness of the pelvic ligaments and a sinking of the uterus: and this, with the secondary changes occurring in the uterus itself, is the cause of the descent.

During some violent efforts, in epileptic convulsions, while straining at stool, or in a severe fit of coughing, the uterus may descend and be prolapsed. As a rule, there has been some antecedent condition favouring the prolapse, as too roomy a pelvis; partial prolapse of the vagina; or a womb supported by an atonic vagina and perinæum, and rendered heavy by a polypus, fibroid tumour, or subinvolution.

Symptoms.—Pain is felt of a 'dragging' and 'bearing-down' nature—mostly in the back and loins, aggravated by standing or walking. The patient occasionally complains of a sensation as if 'something were coming down,' when at stool. In the earlier stages the symptoms of retroversion are present; later on, when the bladder and rectum participate in the displacement, symptoms of vesical and rectal distress follow:—rectal irritation, tenesmus, sense of pressure, occasional difficulty in defæcation, ending, when there is complete prolapse, in cystocele or rectocele. The congestion which accompanies the prolapse is the cause often of menorrhagia or metrorrhagia. In extreme cases the epithelial surface of the procident mass—at first

thickened and rough—may inflame and ulcerate, and these ulcerations may scale over and occasionally bleed. The irritation from the urine still further increases such ulcerations. I have seen a large gangrenous slough on the surface of a procident uterus. This may be the result of strangulation of the mass at the vulvar opening. (See Barnes's 'Diseases of Women,' on prolapse of the uterus.)

Some time since a lady, over sixty, consulted me for complete prolapse of the womb, and a foul discharge, which had continued for some time. On examination, I found one of these foul ulcerations, in size about the circumference of a penny; and issuing from the hardened and everted os uteri was a most fetid and dirty-coloured discharge. I feared malignant disease of the uterus. I dilated the canal, and found, growing from the upper part of the elongated cervical portion, a small polypus, which I removed. The interior of the uterus I then treated with nitric acid—this I repeated; the external ulceration I also treated with nitric acid and chromic acid. Gradually this patch healed, and the discharge from the uterus became less offensive, and finally disappeared. The patient, before I saw her, had tried a variety of supports, and had given each up in turn from its inability to sustain the uterus. Ultimately I returned the prolapsed womb, and retained it comfortably in position with a vulcanite Zwanck's pessary, for which she was prepared by the previous use of oakum.

Diagnosis.—In the earlier stages of prolapsus we find the os uteri lower than usual to the examining finger, and the body of the womb lower in the pelvis. It may be that the uterus is anteflexed, or that there has been an antecedent retroversion. Even in this early stage we may detect a prolapsed state of the vagina and a flaccid condition of the anterior vaginal wall. If the uterus has descended for any distance, or if it presents at the vulva, or is outside of it, the least care

will prevent any error of diagnosis. It is better to examine the patient standing, if we desire to estimate the degree to which the uterus has descended. It is well always to take the measurement of the uterine cavity with the sound. This is necessary, not alone to determine the position of the uterus, but also to differentiate true prolapse of the uterus from either prolapse complicated with hypertrophic elongation of the cervix, or the same distortion when it occurs alone.

In ordinary prolapse the sound may pass a little further than natural into the uterus, or the canal may be normal in length; while if there be hypertrophic elongation of the cervix, the sound passes a considerable length, and we prove with it that the uterine cavity is enlarged, while by palpation we feel the fundus in its proper position. If we pass the uterine sound into the prolapsed uterus, while in the state of procidentia, it may enter to the extent of some three or more inches. When the strain is removed from the relaxed tissues, on reposition, it will be found to pass to about the usual length. With any exercise of caution, no one can mistake a case of procidentia for polypus or inversion of the womb. (See 'Hypertrophic Elongation of Cervix.')

Treatment.—We may divide the treatment of prolapsus thus: (1) Prophylactic; (2) replacement; (3) retention; (4) operation. Under the first head we include those general constitutional and local measures which tend to reduce the size and weight of the uterus. With this object we enjoin such an amount of rest in bed, or on a couch, as the patient's circumstances will permit. Unfortunately, many cases of prolapse are met with in women who have to work for their living, and who cannot afford to lie down. In the earlier stages, when we recognise the displacement, the free use of the vaginal douche, with astringent washes, such as those of

alum, tannin, or sulphate of zinc, or tampons of salicylic acid wool and glycerine. These powders, being added to the tampon in various proportions, can be introduced by the patient at bedtime, and worn during the night. Tight-lacing must be prohibited, and the under-garments suspended from the shoulders and not from the abdomen or hips. The patient may be made to wear a properly adjusted abdominal support or belt. This should fit accurately, raising and supporting the intestines above the pubes.

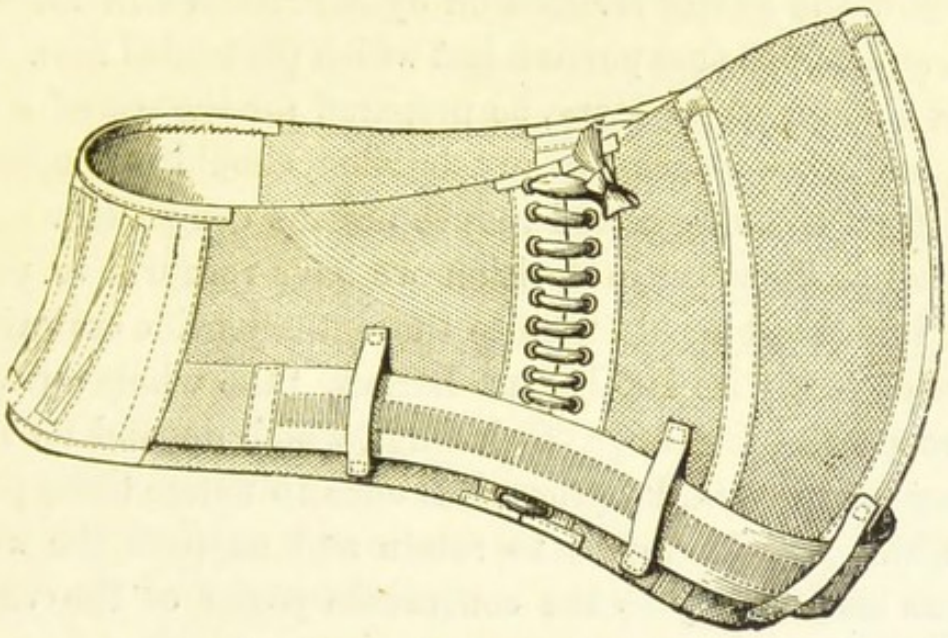


Fig. 124.—Abdominal Support.

Regular cold bathing, and especially sea-bathing, when such can be had or borne, are of service. At the same time, any constitutional or local condition which promotes either congestion of the uterus or favours relaxation of its supports must be attended to. Occasional depletion of the cervix; the administration (during the menopause especially) of such tonics as strychnine and the mineral acids, quinine and arsenic; careful attention to the bowels, so as to prevent all straining at stool, with the occasional use of cold-water enemas or a saline water given in the morning, and the correction of any version or flexion of the womb,

are some of the simplest and most efficacious measures we can adopt.

It is of special importance to attend to any chronic cough, and to allay laryngeal and lung irritation. If the prolapse has lasted for some time, and the uterus is descending low in the vagina, or is protruding from the vulva, we have to replace it.

To replace the procident mass, we get the patient into the knee-elbow position, and grasping the base of the tumour, we follow the advice insisted on by McClintock in all such cases, and return that portion last which protruded first. The uterus should, if necessary, be prepared for the use of a pessary, and those means, already detailed, should be employed to contract the vagina and reduce uterine congestion.

To retain the uterus in position we have recourse to pessaries. I shall not allude here to those unscientific curiosities, but rejecting, with Dr. Robert Barnes, 'the whole array of boxwood balls, and huge thick rings, which depend for their efficacy on mere bulk,' proceed at once to notice those pessaries which will be found to retain and support the womb with as little injury to the contractile power of the vagina as possible.

What the results of the practice of placing in the vagina these huge and incompressible balls must be, we may judge from Dr. Barnes' description of an extreme case, in which he had to apply a strong polypus forceps, with curved ends, to grasp the ball, and thus remove a ball 'nearly as large as the head of a seven months' child.' We may classify the pessaries useful in prolapse under these heads:

(*a*) Those useful in incipient descent, complicated with retroversion or anteflexion.

(*b*) Those applicable in incomplete prolapse of the uterus, with partial prolapse of the vagina.

(*c*) Those suitable for complete prolapse of the uterus, with

inversion of the vagina and loss of contractibility of the vaginal walls.

For class (*a*) the best pessary we can employ is the ordinary Hodge. We may select any of the materials we prefer —vulcanite, celluloid, or wire with rubber covering. I prefer the celluloid, as it is the easiest moulded to the shape and size we require. We must adapt it according as the uterus is retroverted or anteflexed. The Hodge, with soft bar anteriorily, of Dr. Greenhalgh, is an admirable pessary; or that with the crossbars of rubber (Figs. 125, 126).

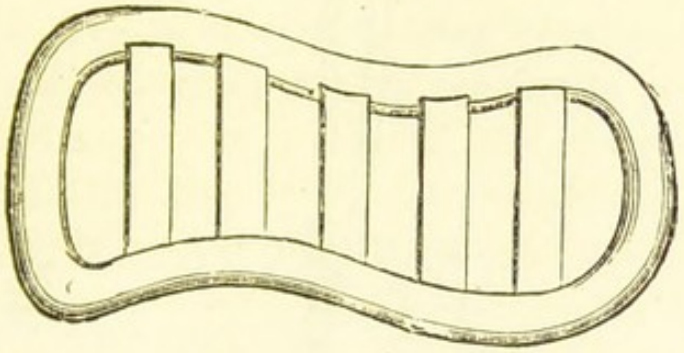


FIG. 125.—Hodge's Pessary with crossbars of Greenhalgh.

In class (*b*) Hodge's pessary will be found to answer admirably in a large number of cases. Here the pessary should be well cupped, large enough to retain its position, but not

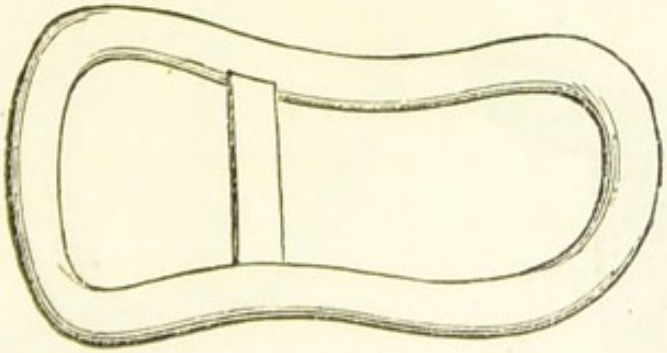


FIG. 126.—Hodge's Pessary with crossbar of Greenhalgh.

so large as to forcibly distend the vagina. Such a pessary we should teach the patient how to remove and replace. All pessaries should be periodically removed and cleansed, and during their use vaginal injections, with Condy's fluid, should

be occasionally employed. If a Hodge's pessary, or some modification of it, do not rectify the prolapse, we may try a 'watch-spring' ring covered with rubber. The ring must

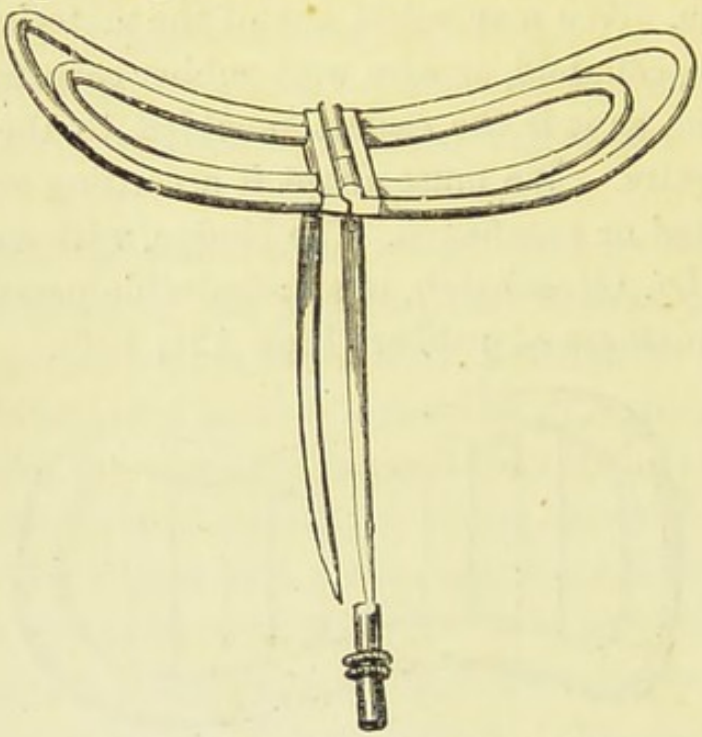


Fig. 127.—Godson's modification.

be of a size suitable to the case, sufficiently thick, and with a strong spring. It had better be removed at night by the

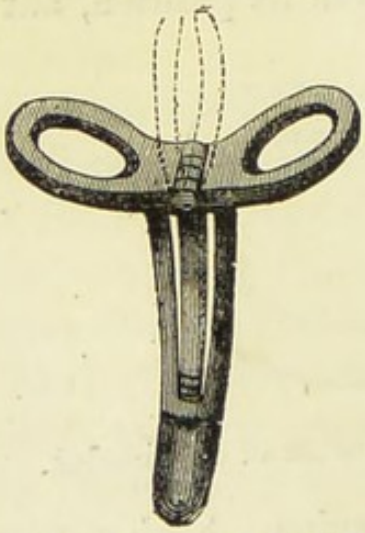


Fig. 128.—Vulcanite (Zwanck).

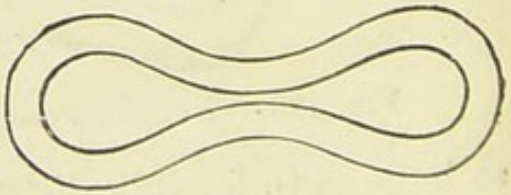


Fig. 129.—Watch-spring Ring.

patient, and reinserted in the morning. In this degree of prolapse, also, we may have to use a Zwanck's pessary.

We may use the vulcanite kind or the modification of Dr. Clement Godson. I find that patients manage the vulcanite Zwanck best, and prefer it to the wire. It has the disadvantage that it is apt to accumulate discharge and thus become unpleasant; also the screw which regulates the divergence of the wings is liable to be broken in screwing or unscrewing it. The patient is easily taught, however, to use the pessary, and how to insert or remove it. This latter she should do on lying down at night, placing the pessary in a little weak Condy's solution. If Godson's kind be selected, it is equally easy of adjustment, and it certainly has the advantage in the points of cleanliness and durability.

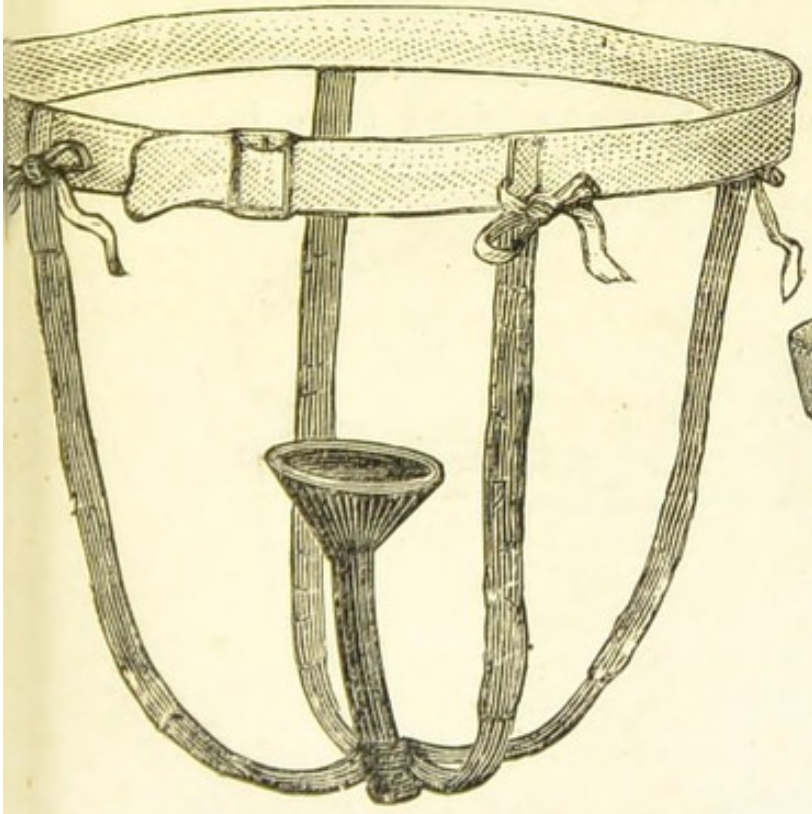


FIG. 130.—Barnes's Cup and Stem.

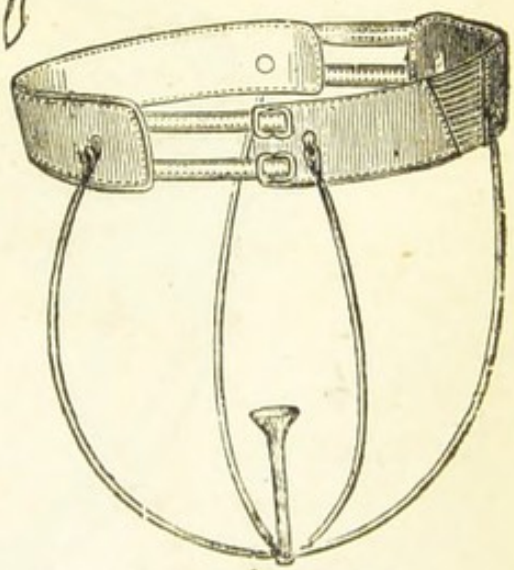


FIG. 131.—Napier's Prolapse Pessary.

In complete prolapse it will be found extremely difficult to sustain the uterus by any pessary. If we fail with a Greenhalgh, we may try Cutter's prolapsus pessary, or Barnes's

cup and stem, made either in vulcanite or gutta-percha, retained with elastic bands. I do not find the inflating pes-

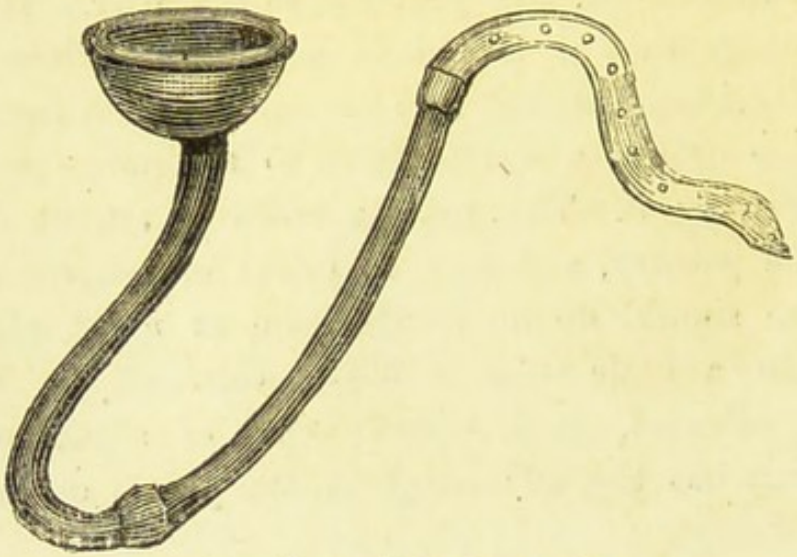


FIG. 132.—Cutter's Prolapsus Pessary.

sary of much service in prolapsus; yet it is the best of its kind. But I dislike the principle of all these balls and

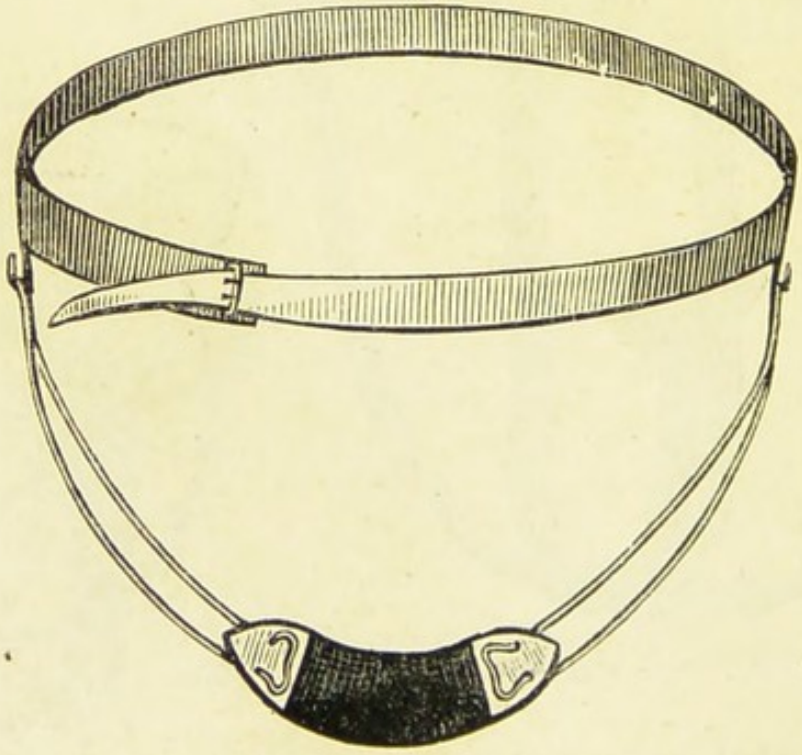


FIG. 133.—Light Pelvic Strap for applying Perinæal Pad (Higginson).

rings, and rarely myself use them. In many cases, and in every variety of displacement, both material support and

considerable comfort may be obtained from a carefully fitted abdominal support.

Much may be done in such cases by a proper perinæal pad; this can be maintained in its place on the perinæum



Fig. 134.—Inflating Pessary.



Fig. 135.—Air-pad Pessary (Mayer and Meltzer).

by a suitable abdominal support and perinæal band, like that of Palfrey (Fig. 136, Messrs. Maw and Son).

Surgical Procedures.—Various plastic operations are performed to remedy complete prolapsus. I do not enter in

detail into the steps of these operations here; they are fully and most completely described in all the larger works on gynecology. We may thus classify them:—1. Those operations undertaken with the object of restoring and strengthening the perinæal body; 2. Those intended to produce contraction of the vaginal canal; 3. Partial closure of the vaginal opening; 4. Amputation of the uterus.

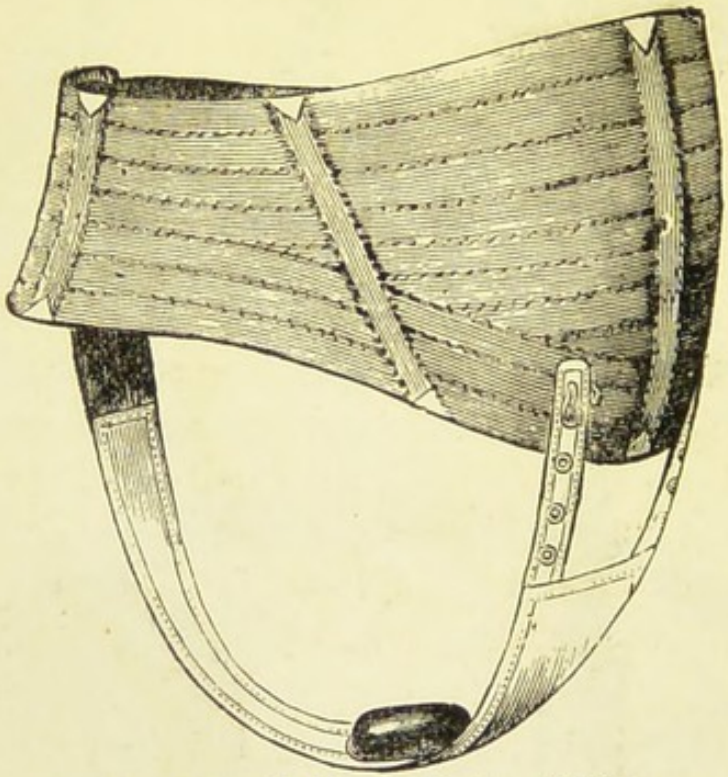


FIG. 136.—Palfrey's Perinæal Pad (Maw & Co.).

Perineorrhaphy.—'If we ever intend,' as Dr. Gaillard Thomas insists, 'to inculcate true, rational, and reliable precepts,' we must regard the perinæal body as the triangular concavo-convex body, with its apex superiorly, composed of strong elastic connective-tissue, that fills in the space between the anterior wall of the rectum posteriorly, the vaginal wall anteriorly, and the summit of the vagina above. This elastic connecting pillar is itself under the influence of, and is supported on, a set of muscles, the tendency of whose action is to throw the perinæal pillar

upwards and forwards, thus assisting in the support and closure of the vaginal canal.

(1) It 'sustains the anterior wall of the rectum and prevents a prolapse of the bowel, which, did it occur, would inevitably drag downwards the upper vaginal concavity,

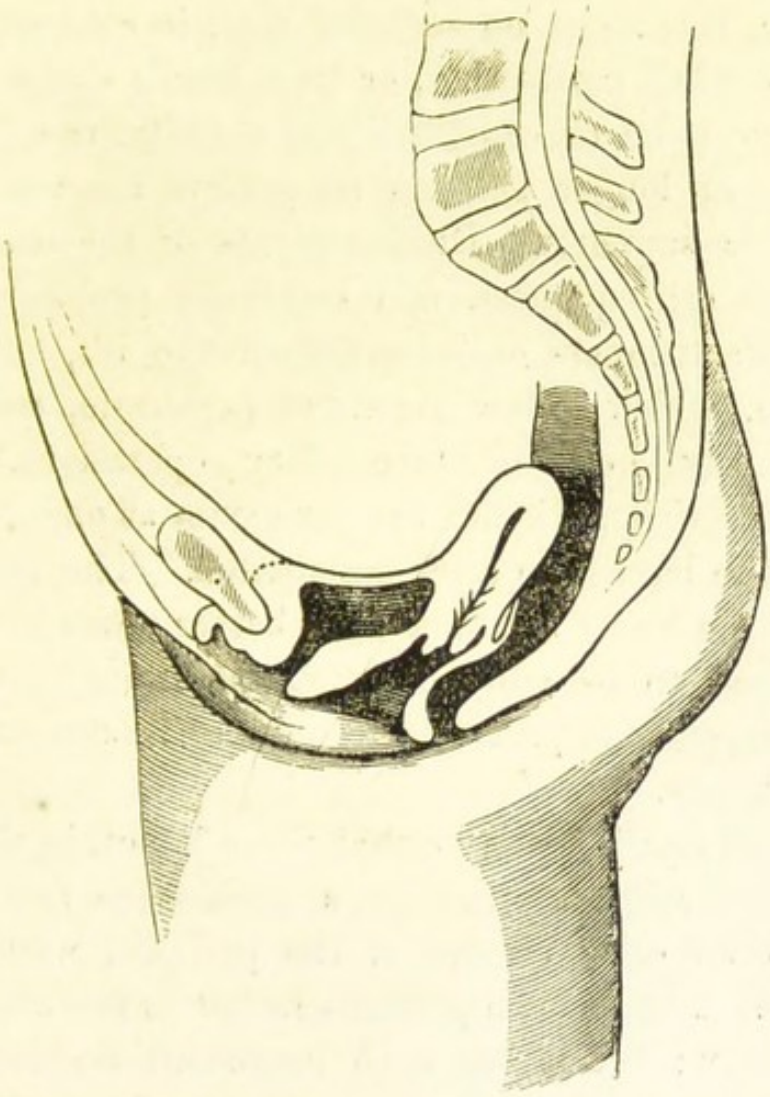


FIG. 137.—Absent Perinæum, after Martin.

and with it the cervix uteri, and destroy the equilibrium of the uterus. (2) It sustains the posterior vaginal wall, and prevents a prolapse of this partition, which would favour rectocele. (3) Upon the posterior vaginal wall rests the anterior, and upon this the bladder, and against the bladder lies the uterus; all of which depend in great degree for

support upon the perinæal body. (4) It preserves a proper line of projection of the contents of the bladder and rectum, and thus prevents the occurrence of tenesmus, a frequent cause of pelvic displacements. It is truly "the keystone of the arch" on which the uterus is supported in the pelvis.' (See Gaillard Thomas, 5th Ed., p. 162.)

We need, then, feel no surprise that, in consequence of laceration during parturition, or from atonic states due to prolonged pressure or constitutional debility, the perinæal body should no longer perform its part in the mechanism of the pelvic supports. Displacements of the uterus are amongst the consequences, and especially prolapsus. Assuredly if practitioners only recognised the ills, immediate and remote, which follow lacerated perinæum, we should less frequently hear of 'secondary operations.' The sensible obstetrician stitches the perinæum at once when he recognises the laceration after parturition. The futile plan of binding the knees together were better never conceived, unless indeed to be adopted after the immediate operation. It encourages procrastination, and is almost certain to end in failure.

Take it all in all, I believe that there is not, in the entire range of gynecological practice, a point more necessary to insist on than early closure of the perinæal wound after parturition. This caution pertains rather to midwifery than to gynecology; but it has such important bearing on the future happiness and comfort of a woman, when the labour has been long forgotten, that it warrants this stress being laid upon it.

Whatever operation is performed (I believe that of Mr. Lawson Tait to be one of the most perfect in principle, and not difficult of execution), the objects are, to denude the edges of the rent; to expose, posteriorly, two raw vaginal surfaces for union, so as to bring the rectum forward; to

restore the power of the sphincter ani; and to create, where necessary, a new perinæal body. The steps vary according as the operation is intended merely to rectify a partial rupture or a complete rupture. In the former case, the operation is a comparatively trivial one, whereas, in the latter, we have not alone to construct a perinæal body and narrow the vagina, but also to re-establish the functions of the sphincter muscle.

Operations intended to produce Contraction of the Vaginal Canal (*Elytrorrhaphy*).—The principle of these operative procedures consists in the removal from the vagina of portions of the mucous membrane from the anterior or posterior wall, or from both. The shape of the portion removed, whether the triangular form of Sims, the variously shaped surfaces exposed by Emmet, the pentagonal of Simon, the oval denudation of Dieffenbach, is of secondary importance. Sims's operation (colporrhaphy) is that perhaps most frequently performed.

It has to be remembered that we have three distinct abnormal states to consider in connection with this operation: primary prolapse of the vagina (antecedent to the prolapsus uteri), hypertrophic elongation of the cervix, and prolapsus uteri. Associated with the descent of the uterus are the two fundamental errors, want of vaginal support, and uterine traction. Increase of uterine weight is the third most important factor. No operation can give us the assurance of correcting these conditions, nor yet a series of operations. Hence we can give no guarantee of any permanent result.

Operation for Closing the Vaginal Opening (*Episiorrhaphy*).—This may be done to the extent of completely closing the vaginal opening, leaving only a space for the passage of urine; or the orifice may be contracted, and yet sufficient room permitted for coitus.

Deferred Operation for Lacerated Perinæum.—As a minor gynecological step, frequently required of a practitioner, it may be well to describe here the steps of the operation for complete or partial rupture of the perinæum, when the operation is deferred.

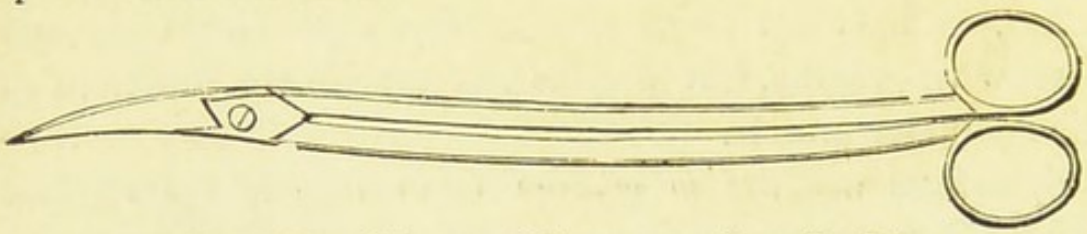


FIG. 138.—Scissors of Sims, curved on the flat.

Appliances required.—A straight scalpel; a pair of curved scissors; artery forceps, dissecting forceps, some torsion



FIG. 139.—Self-retaining Catheter (Skene-Goodman).

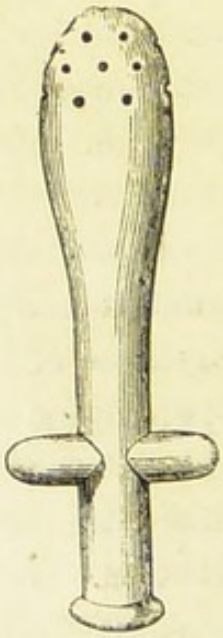


FIG. 140.—Self-retaining Catheter (Sims).

forceps, a few bulldog forceps; perinæal needle, with the eye in the point, rectangular or curved; a few short well-curved needles, and needle-holder; silkworm gut; silver wire; a shot-compressor; a self-retaining catheter; open sponge-holders. A few assistants and an anæsthetizer are required, and a nurse.

The patient is placed on a conveniently sized table, opposite a good light, and is thoroughly anæsthetized. The head and shoulders are supported with pillows. She is

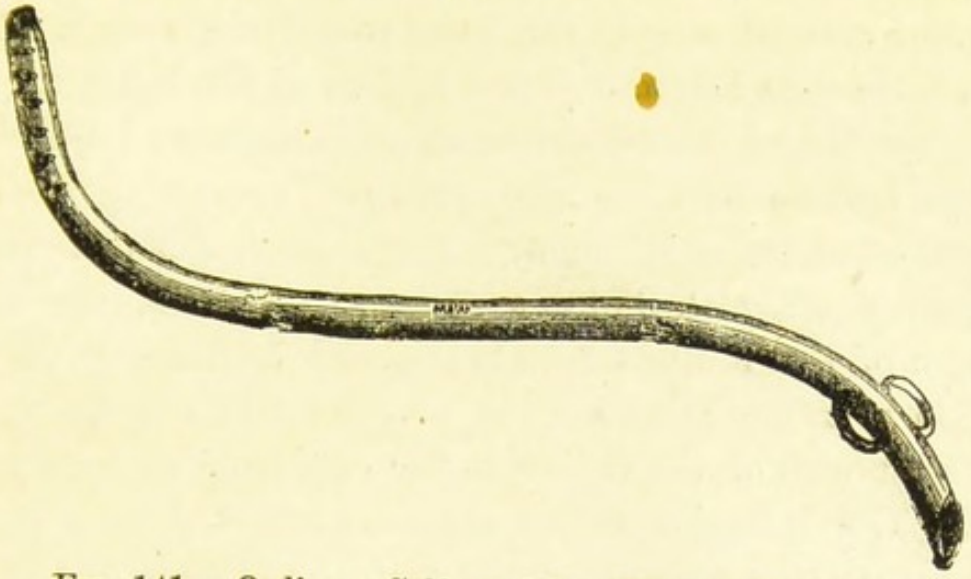


FIG. 141.—Ordinary Self-retaining Sigmoid Catheter.

brought well to the edge of the table, in the lithotomy position, and the knees are held apart by two assistants: one of whom controls the knee with his arm, while at the

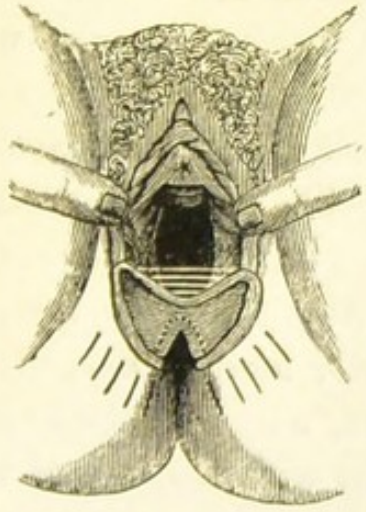


FIG. 142.—Denuded Surface, Anus involved (Goodell). No. 1.

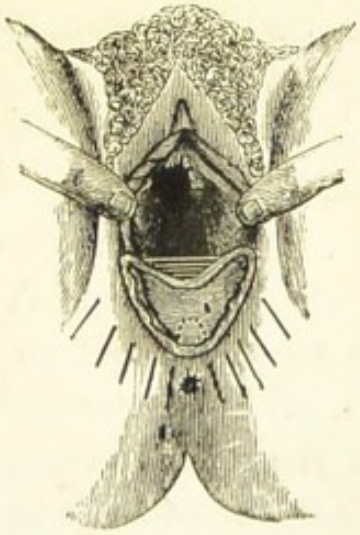


FIG. 143.—Denuded Surface, Anus not involved (Goodell). No. 2.

same time he stretches the labium of that side either with the free hand or with the hand of the same arm, which leaves the other at liberty to assist the operator.

As the operation may be tedious, the feet and legs of the patient should be protected from the cold by stockings, and blankets wrapped round them. All being in readiness, the operator cuts off closely the hairs round the margin of the rent. He next introduces two fingers of the left hand into the rectum, and puts the mucous membrane on the stretch. I shall include here the steps required, presuming the rent to extend as far as the anus. The operation is commenced by paring off with knife or scissors, or both, the rectal margin of the mucous membrane, and continuing the dissection by removal of a layer of the mucous lining of the posterior wall of the vagina to the extent of an inch and a half. The lateral margins are now attacked in a similar manner, until a triangular raw surface at either side of the labium is exposed, of about one inch in breadth, and over an inch and a half in length. Bleeding is readily controlled by torsion and small bulldog forceps or serres-fines, assisted by the use of some iced water.* The raw surface at one side should be an exact counterpart of that on the other. The extent of the denudation, anteriorly and posteriorly, will depend on the extent of the laceration. He now prepares to pass the sutures. One sharply curved needle, such as that of Croft, or a properly curved short needle, held in a needle-holder, is passed, armed either with Bantock's silk, silver wire, or silkworm gut (I prefer wire), from the lower margin of the anus and half an inch to its outer margin, deeply upwards, across the recto-vaginal septum, well in front of and above the bowel-orifice, and is brought with a sweep of the needle down and out at a corresponding point at the opposite side. This is Emmet's suture. When passed, nothing should be seen of the wire save the two ends. It is represented in the figure by the dotted line. This suture is next secured by twisting. The perinæum is now closed by sutures entered at the points shown in Figs. 142, 143. The

* Better still by means of a sponge and very hot water.

safest plan is to pass the first few sutures, unexposed, through the recto-vaginal suture. The last few passed will be partly exposed on the vaginal side of the rent. Each suture is secured by perforated shot. The wound is cleaned and sponged with carbolic solution; the thighs are brought together, the patient is placed on her back, and the urine

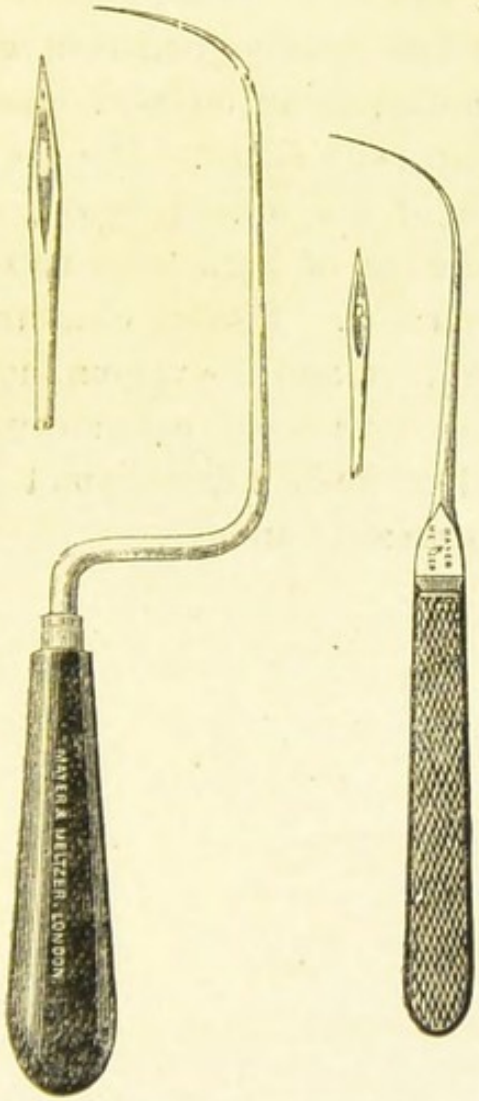


FIG. 144.—Perinæal Needles.

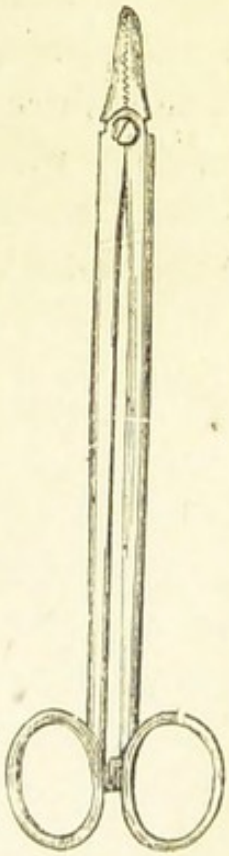


FIG. 145.—Needle-holder of Sims.

is drawn off twice daily, or oftener if necessary. I much prefer to draw off the urine rather than trust to a retained catheter. Should it become clogged or slip out, though this can hardly happen with the Skene-Goodman or Sims'

instruments (Figs. 139, 140), the success of the operation may be endangered. The bowels had better at first be locked with opium, and simple but nourishing food given. They need not be moved until the sixth or the seventh day. This is effected by an emollient enema, and, after they have acted, the rectal stitch may be removed. The patient must keep her bed for a fortnight, and it is well to have the knees bound together. I have had equally good results by the administration, every other day, of an olive-oil enema. In fact, it is the plan that I generally adopt. We get rid of the unpleasant complication of the locked bowel, and the risk attendant upon the passing of hard fæcal masses, with the consequent rectal irritation. Perfect cleanliness must be enforced after the operation, and the vagina should be carefully washed out each day with tepid permanganate of potash injection. It is well to keep a dry thymol pad over the wound, with a light perinæal bandage.

CHAPTER XII.

ELONGATED CERVIX, COMPLICATING PROLAPSE OF THE UTERUS OR VAGINA.

To enter into the various matters in dispute regarding the relation of the hypertrophic elongation of the cervix uteri to prolapse of the uterus or vagina, is completely outside the scope of such a work as this. I shall simply limit any observations to such practical points in the etiology and diagnosis of the affection as it is requisite for every student and practitioner to know. The following facts appear to be pretty generally accepted, all of which have a practical bearing on the management of this condition :

1. The cervix uteri may be hypertrophied and lengthened out, either in its infra-vaginal or supra-vaginal portions. Whether this elongation is a primary growth (Huguier), independent of any dragging action of the prolapsing vagina and bladder, or is a consequence of this latter, is a matter of dispute. We have other views—as, for example, that of Taylor—that it is the result of non-involution of the uterus after labour, when the uneffaced infra-vaginal cervix drags on the non-glandular isthmus and draws it out. Dr. Taylor does not believe in the commonly accepted doctrine of the effacement of the glandular cervix during pregnancy. He is of opinion that it is simply hypertrophied and temporarily expanded.

2. Elongation of the infra-vaginal portion of the cervix is not, as a rule, attended with prolapse. The fundus

remains at its proper level in the pelvis, nor does the os descend so far as to protrude. There is a peculiar elongation of the anterior lip accompanying this condition, known as 'tapiroid.'

3. Hypertrophic elongation of the supra-vaginal portion is, sooner or later, associated with prolapse and procidentia of the uterus and bladder. There are here two principal factors—growth and traction: which is the initial process we will not attempt to say. It would seem rational, that traction and growth may each have an independent share in the early stages of the distortion. It is difficult to define the exact spot where the 'vicious circle,' as Dr. Goodell aptly terms it, commenced.

(4) Eversion of the lips of the os uteri, with exposure of the cervical canal, and laceration of the cervix, are frequent attendants on this form of prolapse of the womb.

Causation.—The most frequent causes of hypertrophic elongation of the cervix are: subinvolution of the uterus after labour; injury to the cervix during labour, and laceration of the cervix. In these two latter conditions we find the two associated states which usually produce hypertrophic change, viz., hyperæmia and hyperplasia; fibroid tumours; pelvic adhesions; uterine displacements; laborious occupations.

Treatment.—Replacement and support, and similar operations as in the case of ordinary prolapse; removal of the cervix by amputation, by means of the knife, galvanic knife, galvanic wire, or écraseur. These latter operations, or those of Sims and Huguier, are not operations to be, as a rule, considered by men in general practice, and therefore I do not refer to them.

Ascent of the Uterus.—The uterus recedes from the reach of the examining finger under two important conditions: (1) pregnancy—this ascent of the uterus and retro-

cession of the os uteri is noticed as the uterus enlarges from the fourth month; (2) the uterus is pushed or drawn out of position by a pelvic or abdominal growth, which has connections either with the uterus directly, or indirectly, though some of its pelvic supports. It is well to bear in mind, in practice, that this recession of the uterus may be associated with (*a*) pregnancy; here we have (after the third month), the other local signs of pregnancy; (*b*) ovarian tumours—frequently in ovarian disease the uterus is not only drawn up from the pelvis, but the cervix is shortened, and the os uteri may be felt almost on a plane with the vaginal roof; (*c*) fibrous and fibro-cystic disease of the uterus—the cervix uteri is frequently nipple-shaped, moving, like the nipple on the breast, over the fibroid mass which is felt beneath; (*d*) abdominal tumours (springing from or connected with the abdominal viscera), as hydatid tumours, cystic growths, malignant disease; (*e*) peritoneal effusion (hæmorrhagic, serous, or purulent), pelvic and abdominal, with consequent adhesions; (*f*) pelvic tumours, occurring in connection with the rectum or vagina or in Douglas's space. It is a matter of considerable importance in arriving at a diagnosis that we note ascent of the uterus, and determine its cause.

CHAPTER XIII.

INVERSION OF THE UTERUS.

By inversion of the uterus we simply mean a turning of the uterus inside out. It is partial or complete, acute or chronic. There are two stages of partial inversion (Crosse): (1) *depression*, (2) *introversion*. The fundus is received into the cavity of the uterus, ultimately reaching to the os uteri; the intruding fundus is grasped by the uterus, and the process of intussusception is continued until the extrusion of the fundus from the os uteri occurs. Once this has happened, the protrusion of the fundus and body of the uterus from the os uteri may continue until the cervix and lips of the os uteri itself are inverted.

Inversion may be met with in practice either as a sudden occurrence or as a chronic condition. The former accident is more fully discussed in works on 'Midwifery.'

The essential condition—as it always is the predisposing element—in inversion, is an atonic state of the uterine parenchyma, favouring relaxation of the muscular fibres. This leads to partial prolapse of a portion of the uterine wall, and is associated with an irregular contraction of the surrounding muscular tissue. The prolapsed portion is treated by the uterus as a foreign body, like a piece of placenta, or the hand; it excites contractions which end in expulsion of a part or the entire of the fundus. This view (Rokitansky) is not inconsistent with the possible and occasional origin of the inversion at the cervix uteri (Taylor

and Klob), which is inverted and protrudes into the vagina.

Causes.—Atony of the uterus, in whole or part, is produced by (1) parturition, (2) tumours and polypi, (3) placental adhesions, (4) hæmorrhage. The process of traction of the uterine wall is associated with the first three of these; hæmorrhage is a consequence of all three. If there be general relaxation of the uterus, such an exciting cause as any violent exertion, or severe coughing, might be sufficient to produce a slight inversion or depression, and give the first impetus to the morbid process. It would appear that inversion of the virgin uterus may take place (Puzos, Boyer, Baudelocque, Langenbeck). See Gaillard Thomas and Barnes on 'Inversion of the Uterus.' Dr. Goodell believes that ectropion of the cervical mucosa may occasionally follow the general relaxation consequent upon sterility, and masturbation in young girls, and thus start the inversion process.

Signs and Symptoms.—These are: the presence of a tumour, generally not voluminous, felt in the vagina, simulating polypus, attended frequently by hæmorrhage, either constant or periodical; bearing-down pains; pain occasionally in walking; perhaps rectal and vesical distress. Anæmia is a common attendant from the associated loss of blood and general debility.

Differential Diagnosis.—The main proofs we rely on that a tumour in the vagina is an inverted uterus are the following: (1) the presence of a soft, readily bleeding and sensitive tumour; (2) the absence of the uterus from its position in the pelvis; (3) the absence of the normal uterine opening, and the impossibility of passing the uterine scund farther than the neck: the finger feels at the summit of the tumour the cervix, perhaps thinned out to a ring.

We examine thus a case of suspected inversion, remem-

bering the liability to mistake it for polypus or procidentia, in the case of partial inversion, for intra-uterine fibroid.

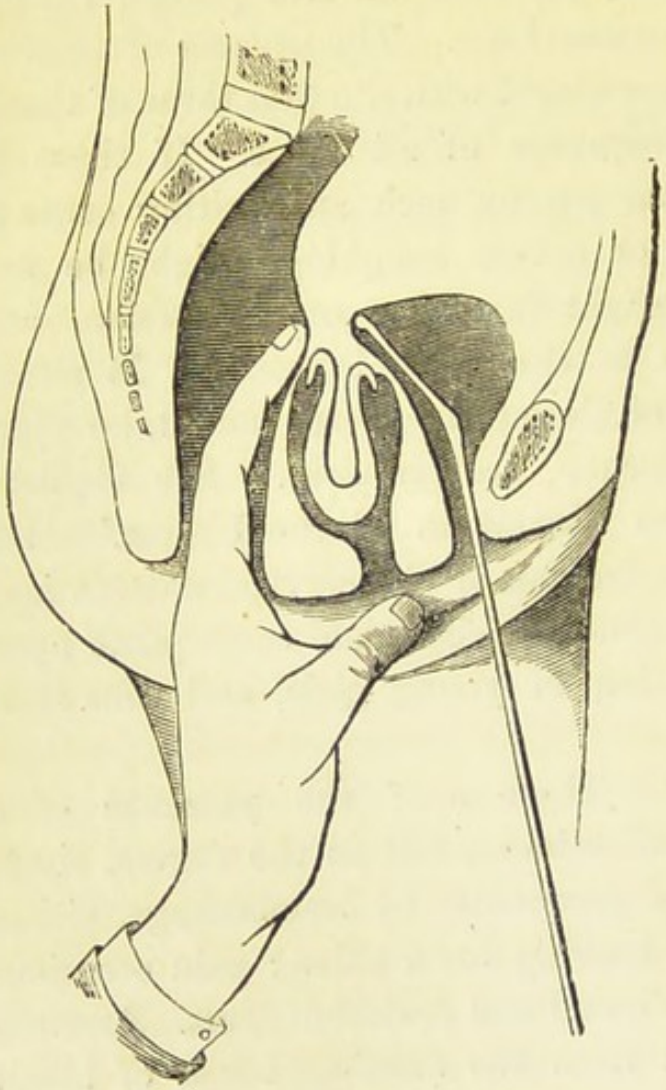


FIG. 146.—Conjoined Examination—Inverted Uterus.

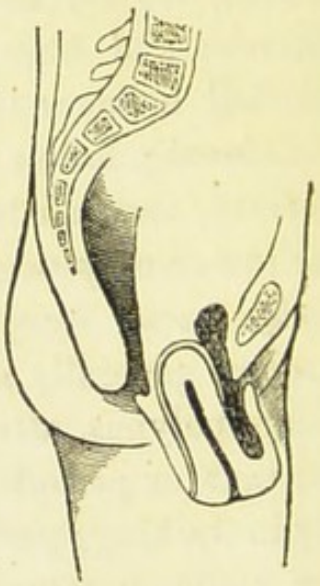


FIG. 147.—Prolapsus Uteri (Schroeder).

In Complete Inversion.—Having made a careful digital examination of the size and consistence of the tumour, we explore it through the rectum and detect the absence of the uterus. By conjoined examination we confirm this. We take the uterine sound, and find it arrested at the neck of the uterus, round which we sweep it: it may pass just inside the cervix for the extent of an inch or an inch and a half. The sound is now passed into the bladder, and the

finger into the rectum, and by the recto-vesical examination the fact that the uterus is absent is ascertained.

In Partial Inversion.—This is much more difficult to diagnose. The difficulty is to distinguish it from an intra-

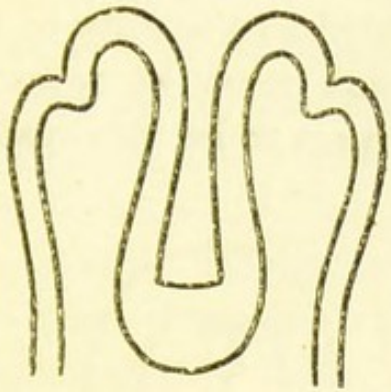


FIG. 148.—Outline Diagram of Complete Inversion (adapted from Thomas).

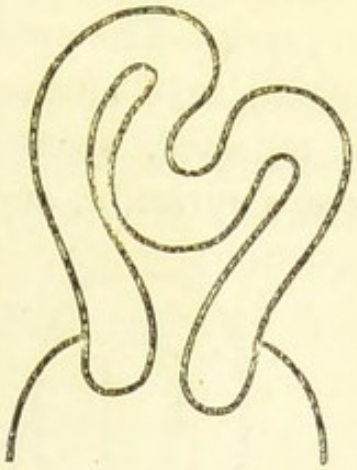


FIG. 149.—Outline Diagram of Partial Inversion (adapted from Thomas).

uterine fibroid. By the conjoined examination we may detect the absence of the fundus. On passing the sound it

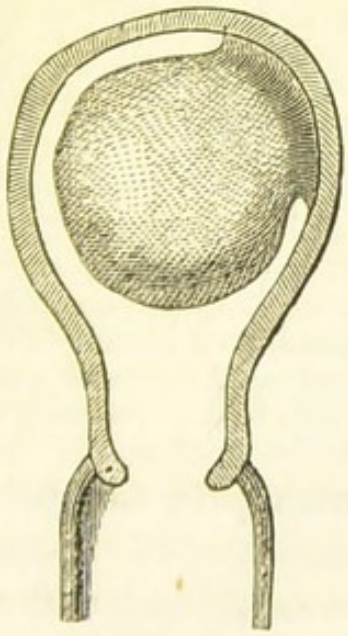


FIG. 150.—Submucous Fibroid.

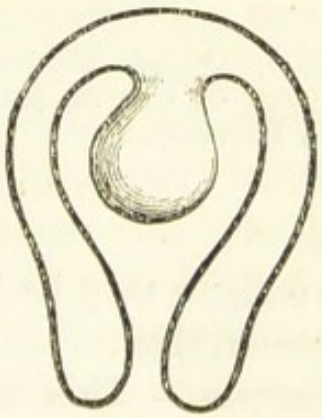


FIG. 151.—Outline Diagram of Polypus at summit of uterine cavity (adapted from Thomas).

is arrested by the prolapsed portion of the uterus, which is sensitive. In the fibroid growth, the uterus is enlarged,

and the sound passes farther than in the normal uterus, while the tumour is painless. The history of the two is different; the fibroid growth is slow—there is no relation to parturition; inversion occurs, as a rule, suddenly, and the uterus is sensitive.

Prognosis.—The prognosis must be always grave. Even admitting, says Thomas, the undoubted authenticity of the cases reported, spontaneous reduction must be regarded only as a curiosity, and not as a process to be anticipated.

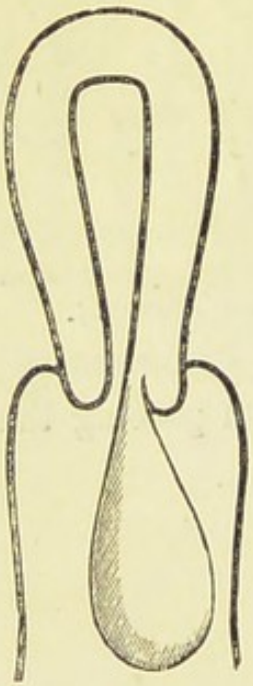


FIG. 152.—Outline Diagram of Polypus of Cervix (adapted from Thomas).

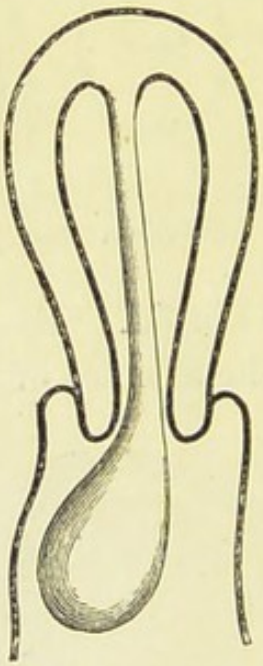


FIG. 153.—Outline Diagram of Polypus with long pedicle attached to the summit of uterine cavity; the cervical canal contracted on pedicle (this may lead to partial inversion).

The patient may be worn down with pain and exhausted by hæmorrhage.

Treatment.—This may be briefly considered under three heads: (*a*) palliative; (*b*) taxis and pressure; (*c*) amputation.

Palliative.—Strong astringent preparations of alum, tannin, perchloride and persulphate of iron, matico, hazeline; daily injections of very hot water; ergot given internally.

Aran, in very bad cases where amputation was indicated, used the Paquelin cautery, or potassa cum calce, to the surface of the mass. In this manner the course of nature, when the uterine mucous membrane thickens and becomes like skin, is imitated. The patient lives on without much pain or inconvenience.

Taxis and Pressure.—This must in very old cases be assisted by the local application of belladonna, in the form of ointment and suppository; the previous dilatation of the vagina by the hydrostatic bags; and possibly two or three small and superficial longitudinal incisions through the tissue of the cervical ring. But the great danger of the employment of force has to be remembered; the vagina may be ruptured, or fatal peritonitis result. 'A small hand,' says Thomas, 'a cautious, unexcitable mind, and constant vigilance, during all the efforts by taxis, must be combined with thorough knowledge of the subject, to avoid the imminent danger . . . .' 'I confess that I should prefer to trust a patient, in whom I feel great interest, to the operation of abdominal section (for the reduction of the tumour), than to that of prolonged taxis at the hands of a rough, unintelligent and inexperienced practitioner.' If this be Dr. Gaillard Thomas's deliberate opinion, after a personal experience of nine cases of inversion, it is not necessary to dwell on the care and caution with which attempts at reduction of the chronically inverted uterus must be made.

The ordinary practitioner is not likely to attempt this operation without mature consideration and careful consultation. The principal obstacle to be overcome is the constriction of the cervical ring, through which has to be returned the enlarged and hardened uterine body. I shall only refer here to two modes of manipulation. Few surgeons would attempt the bold step of Thomas, viz., abdominal section, in order to dilate the cervix from the

peritoneal side with a sort of steel glove-stretcher. In fact, in practice, it would be far better to trust to continuous pressure, than run the risk of any dangerous force or prolonged manipulation. Before an attempt at reduction be made, the rectum and bladder should be emptied, and an anæsthetic administered. The nails of the operator's hands should be carefully pared, and the operating hand well oiled. One hand must be laid on the abdomen, over the situation of the ring of the opposing cervix. With this counter-pressure is maintained against the hand operating in the vagina. The axiom so strongly insisted on by the

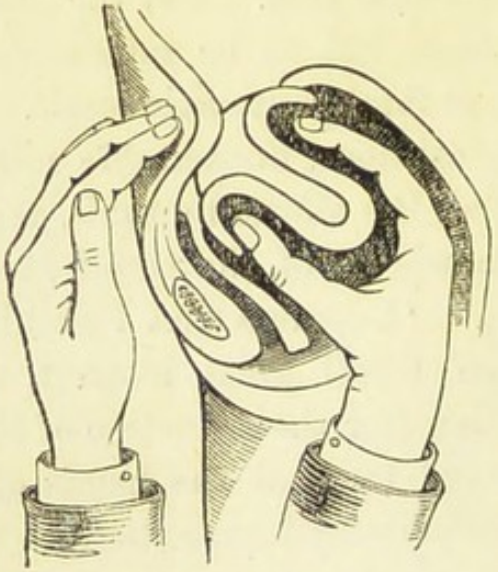


FIG. 154.—Reduction of Inverted Uterus (Emmet).

late Dr. McClintock of Dublin is to be remembered, of returning first the part which has inverted last. Dr. Emmet's plan is then adopted. The patient is placed in the lithotomy position ; the inverted uterus is grasped between the finger and thumb of the right hand ; the fingers of the left hand maintain steady counter-pressure on the abdomen. The inverted fundus is pushed steadily upwards with the right hand, while the fingers are used to dilate the cervix. If the case be comparatively recent, the plan of dimpling with the fingers the fundus, and forcing the indented wedge

thus formed into the cervical ring, and so overcoming the resistance, may be tried. Repositors of different kinds have been tried. The figure shows the cup-repositor of Professor White. The cup is steadied with the right hand against the fundus, and the force is applied by means of a spiral spring, which the operator presses against the chest, counter-pressure being maintained by the left hand over the cervix, on the abdomen.

Pressure.—If from the duration of the case, or from the experience of moderate manual efforts at reduction, we

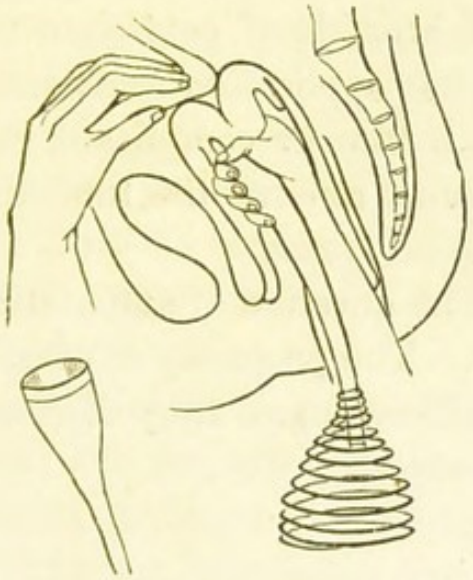


Fig. 155.—White's Cup-repositor (Thomas).

deem it unadvisable to proceed with the taxis, it is better at once to try continuous elastic pressure. Dr. Barnes and Dr Braxton Hicks are the prominent advocates for continuous pressure in this country. The stem and cup of the former may be used for the purpose. The curved stem has at one extremity a cup-shaped disc of rubber, or a hollow cup of caoutchouc. The other end of the stem has attached to it four strong rubber bands, attached to the abdominal belt, which serve to maintain the pressure on the fundus. By tightening the back or front bands, the direction of the

pressure is changed. Counter-pressure is secured by an abdominal pad placed under a broad flannel roller. The position of the cup and the direction of the stem are watched from day to day. It is well to pack carefully the vagina, round the inverted uterus, and also the cup when applied, with a tampon of antiseptic wool soaked in oil. Dr. Barnes advises periodical attempts at reduction with the hand, under chloroform, when the cup is removed. Should the continuous pressure give rise to pain, or there be any sloughing, it must be relaxed, and an interval of rest permitted. Its tolerance may be assisted by the administration of bromide of potassium and chloral. Dr. Barnes advises its application between the menstrual periods. Should a tumour complicate, or be the cause of an inversion, we must remove the tumour and then endeavour to rectify the inversion.

Amputation.—The question of amputation I do not enter into in this work. The propriety of considering it, and the risks it entails, will be found fully discussed in the larger treatises on this subject.

CHAPTER XIV.

POLYPUS UTERI.

At the risk of being considered irregular and unsystematic, I shall deal with uterine polypi out of their proper order in the category of uterine new growths, and consider them immediately after inversion of the uterus. My object is simply to impress still more strongly on the student the differentiation of these two affections.

Polypi we may classify according to the elementary tissues from which they take their origin—celluloid, glandular, fibrous, placental.

The first variety consists principally of cellular tissue and mucous membrane; the second of hypertrophied follicles and connective-tissue; the third of muscular and connective-tissue elements, the former preponderating; while placental polypi have their origin in portions of placenta which have been left in utero, and which, becoming organized and incorporated with the uterus, form polypi.

Fibroid polypi spring from the body of the uterus, and are at one period of their growth submucous fibroids, but they assume the form of polypi through extension into the uterine cavities, and by the gradual narrowing of their base of attachment into a pedicle.

Diagnosis.—This will depend on the size and position of the polypus. Whenever obscure menorrhagia or metrorrhagia occurs from the uterus, especially if the discharge continues foul and offensive, and we are suspicious of

polypus, there is but one safe rule, which is, to dilate and explore the uterus, and not to persevere with palliative treatment. We may be further guided to the suspicion of polypus if there be some enlargement of the uterus and congestion; and if the fundus feels enlarged, and the cervix dilated. The first step towards the diagnosis and treatment of polypus is dilatation of the cervix. The facility with which we can feel the growth will depend on its size and position. At times this is comparatively easy; occasionally it is very difficult. A large extra-uterine polypus is felt at once with the finger; the principal danger is that we may confound it with inversion of the uterus. We are not so likely to mistake it for prolapse.

We may thus tabulate the positive and negative signs of uterine polypus:

Positive Signs.—1. A tumour which has increased in size slowly, frequently growing from the cervix uteri, pyriform in shape, having a narrow neck or pedicle, insensible to touch, not painful when punctured, and varying in size.

2. It may either be felt with the finger in utero, after dilatation of the cervix, and its size determined, or the uterine sound may be passed round its neck or pedicle.

3. Hæmorrhage is a constant accompaniment of polypus; at times there is a foul sanious discharge.

4. The tumour is either situated in the uterus or the vagina; if in the uterus, the sound passes into the uterus from two and a half inches upwards, the cavity of the uterus being enlarged to accommodate the growth; if in the vagina, we can trace the pedicle of the polypus to the cervix, and the uterine sound passes above this, inside the cervix, for over two and a half inches.

5. There is no opening at the dependent portion of the tumour; the encircling ring of the cervix is traced below it or around the pedicle, and the uterine sound can be passed

inside the cervix, between the wall of the uterus and the tumour.

6. By conjoined examination the fundus can be felt in position, and has no marked depression; but the size and consistency of a polypus may be estimated.

7. Fibroid polypus (likely to be mistaken for inversion) may occur in nulliparous women and virgins.

IMPORTANT NEGATIVE SIGNS.—1. Absence of os uteri.

2. Absence of pain.

3. Absence of sensitiveness.

The *symptoms* of polypi are hæmorrhage, uterine pain, leucorrhœa, vesical and rectal distress,—dependent upon the size of the polypus and its position; dragging pain in the back, and perhaps difficulty in walking if the polypus be large, and, occasionally, dysmenorrhœa.

Treatment.—Before removing a polypus we may have to endeavour to restore the patient's general health, shattered by the long-continued strain and loss of blood. This is done by preliminary rest, the use of astringents locally, and dilatation of the cervix by means of the larger bougies, by tents, or Barnes's dilator.

The treatment for polypus is removal. We may remove a polypus by means of the écraseur or the galvanic cautery wire. Small polypi may be twisted. Quite recently, in exploring a polypus, and passing my fingers to the cervix uteri, I felt an extremely narrow pedicle; by twisting the mass, which was about the size of an orange, with my fingers, it came away in my hand. We require for removal of polypi an écraseur, a volsellum, a tenaculum, a polyptome, if the polypus be large. Dr. Atthill uses, in some cases, small canulæ for securing the wire on the pedicle of the polypus.

Dr. Atthill thus describes his method of employing the canulæ: 'The écraseur differs from an ordinary long wire

écraseur only in having the end modified so as to allow of the passage through it of two slender silver tubes identical with those so well known as "Gooch's canulæ." These, armed with a wire of any strength, can be passed with ease up to the base of any polypus; they are then to be separated, and while one is held firmly, the other is to be carried round the pedicle; this can always be accomplished when a silk or hempen ligature is used. It is very difficult indeed to carry a stiff wire round a large tumour with

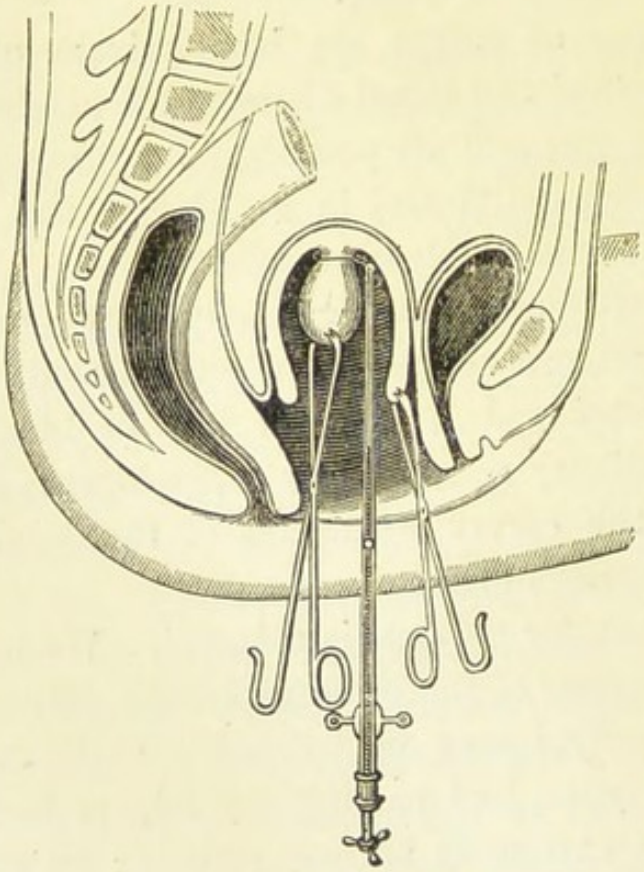


FIG. 156.—Removal of Polypus by écraseur and volsella (adapted from Atthill).

them, yet I have done it, and cases from time to time occur in which this method proves useful. Having once got the wire round the tumour, the canulæ are to be passed through the openings in the extremity of the écraseur; the écraseur is then to be pushed up, guided by the canulæ, till it comes in contact with the pedicle of the polypus; the canulæ can then be withdrawn, and the wire being attached to the

écraseur, the operation is to be completed as if we were using an ordinary wire écraseur. This is, in point of fact, the adapting of the canulæ of Gooch to the écraseur.'

To remove a polypus, if it should be intra-uterine, the uterus should be previously dilated. No anæsthetic is necessary. The removal should not be sufficiently painful or distressing to require it. In the instance of some large polypi in nulliparous women and virgins, it may be well, for a few days previous to operating, to distend the vagina with a Barnes's larger-sized hydrostatic bag. The woman may be given a dose of bromide of potassium the night before the operation. She is placed in the lithotomy position on a suitable couch or table, and by means of the fingers or a notched director the wire is carried well up to the pedicle of the tumour; after which manœuvre, the écraseur having been pushed as far as the neck of the polypus, the wire is gradually tightened. It can be now adjusted to the pedicle, as near as possible to the uterine wall, without injury to the latter. The tumour is then removed by slowly tightening the wire in the usual manner.

Any complaint of pain would be an indication of injury to the uterus.

When severed, and loose in the vagina, it may be removed by an ovum forceps. If the polypus is very large, and cannot after detachment be brought away, or if it endangers the perinæum and its vessels, it must be divided with a polyptome. Sir J. Y. Simpson devised a cutting-hook for this purpose (Simpson's polyptome). The perinæum has been incised at either side of the mediary line, in order to enlarge the outlet, so as to facilitate the removal of a large polypus.

I exhibited a large polypus at the Obstetric Section of the Academy of Medicine in Ireland, which I removed from the uterus, and in which considerable difficulty was

experienced in its extraction from the vagina in a nulliparous female. I then referred to the want of some instrument

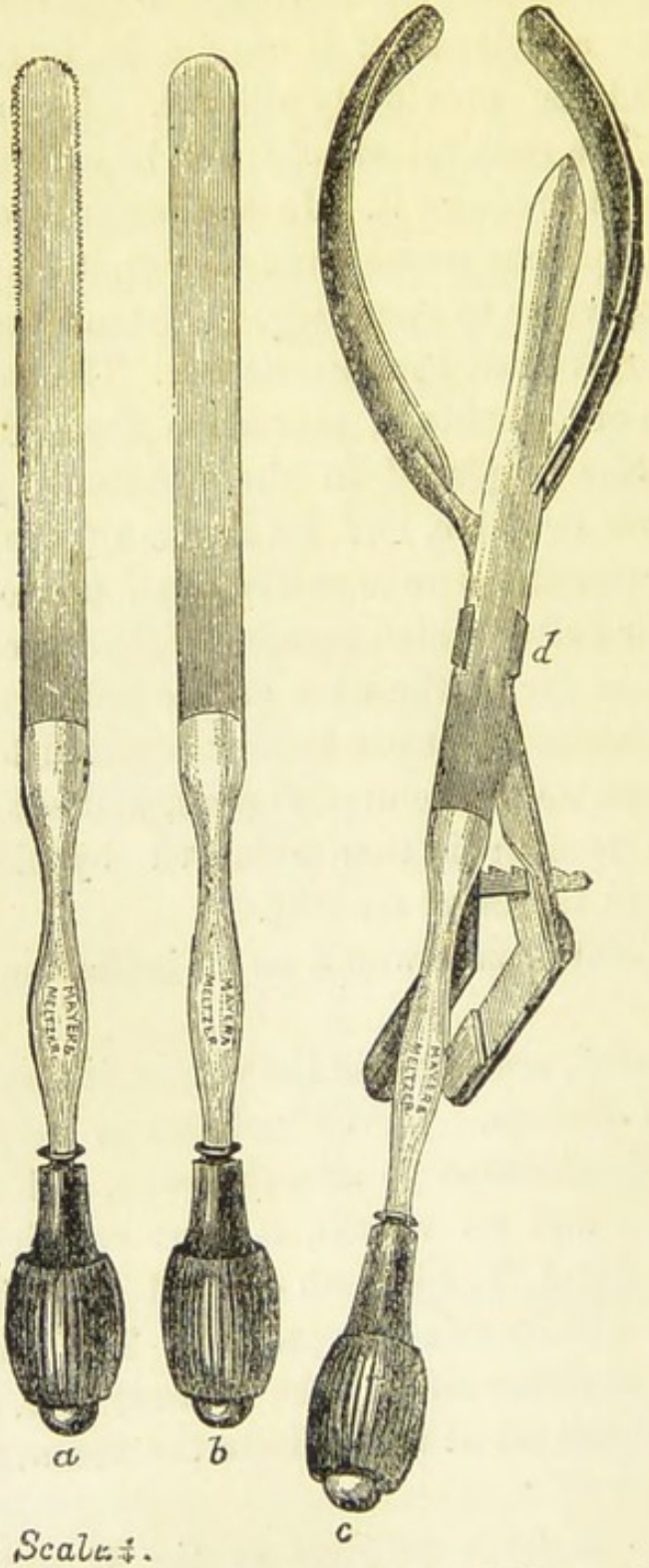


FIG. 157.—Author's Polyptome and Forceps Saw.

(which would combine the purpose of forceps and cutting-knife) for the safe removal of these large growths without

the necessity of incising the perinæum, or the risk of lacerating it. The application of the écraseur to divide the tumour into segments is tedious, and at times difficult. With the aid of Messrs. Mayer and Meltzer, I devised the instrument shown in Fig. 157. This polyptome consists of a straight forceps, lightly made with slender blades, yet sufficiently strong to compress the tumour; there is a groove cut in the lower fourth of these blades, and they are so shaped inside, that the edge of the movable knife or saw glides easily along the blade. They lock readily on a revolving pivot (*d*), and the same lock carries a short sheath, through which the knife passes. The handle of the forceps is at right angles to the shank, and each half is connected by a rack and pinion-bar. Three cutting-blades accompany the forceps, one (*c*) shaped somewhat like a dagger, so as to readily pierce any tumour, and cut from the centre outwards; a second (*b*), broad and flat, with a rounded edge; the third (*a*), a saw. These are made of the finest tempered steel. The tumour can thus be grasped and cut through the centre, the blades either turned round in the vagina, the knife being withdrawn, or the forceps may be applied in a different direction, and the mass cut in four or more pieces. These segments may be separately withdrawn. After removal of the growth it is well to give a few doses of ergot, and occasionally to wash out the vagina with permanganate of potash solution.

CHAPTER XV.

UTERINE INFLAMMATORY STATES, ACUTE AND CHRONIC.

Hyperæmia (Active and Passive).

Acute—Metritis and Endometritis (Cervical and Corporeal).

Chronic—(*a*) Endometritis (Cervical and Corporeal).
(*b*) Chronic Hyperplasia (syn. Sub-involution, Chronic Metritis).
(*c*) Catarrhal inflammation of Cervix.
(*d*) Granular degeneration of Cervix.

THIS classification is by no means strictly exact; but it appears to me the best that can, for clinical purposes, be placed before the student. Space will not permit more than a brief notice of these different states.

HYPERÆMIA.—The vascular system of the uterus is subject to considerable fluctuations in its blood-supply. This we would expect, not alone from its anatomical peculiarities in the distribution of the uterine vessels and the erectile muscular tissue which surrounds them, but also from the influences to which the uterus is subject periodically: such as menstruation, coitus, ovarian excitement, morbid growths, displacements, peri-uterine inflammations. Nor can we ignore, as Dr. Galabin rightly insists, the influence exerted on the uterine arteries by a reflex stimulus. Hardly otherwise can we account for inflammatory mischief arising from some slight exposure to cold, or in some

instances, from the careful passage of the uterine sound and the uterine disturbance which follows mental shock.

Symptoms and Physical Signs.—Such sensitiveness and tenderness are present in these cases as we might anticipate from a slightly swollen and turgid womb. Perhaps there is an exaggeration of the natural secretion, and a tendency to excessive menstrual flux, or some occasional irregularity of the periods, and metrorrhagia; or it might be that on examination we detect a congenital defect, predisposing to stenosis and dysmenorrhœa, or a uterine displacement, or small fibroid. The patient complains of pain in the back, and about the pelvis, and inability to walk much or to stand. Very often the sufferers are women who have to stand a great deal, or are occupied in some sedentary work. They may complain at the same time of dyspeptic symptoms. It may be that we discover cardiac or renal mischief, functional cardiac murmurs, and that the urine is of low specific gravity.

Treatment.—General hygienic measures; such rest as can be obtained; avoidance of coitus; change of air; the warm vaginal douche; local depletion; the use of Kreuznach and Kissingen waters; bromides of potassium and ammonia; the combination, already recommended, of ergotine, quinine, and lupuline; the glycerine tampon (applied with Barnes's introducer, and worn at night); iodine baths; the use of the bath speculum; regulation of the bowels by proper aperients; the saline waters; occasional enemata.

PASSIVE HYPERÆMIA.—If we do not see the case in the earlier stage of hyperæmia, there is very often a protracted history, and the general health has been for some time affected. The same causes as those enumerated in bringing about active hyperæmia have been and continue in operation. It is this condition of uterus which, when persistent, leads to general hypertrophy of the uterine

tissues, and even to chronic hyperplasia. The same indications for treatment exist as in the active state. We must endeavour to correct any general or constitutional fault, while we control local congestion and subdue irritation.

ACUTE METRITIS AND ENDOMETRITIS.—For clinical purposes we may define this state as that of acute inflammation of the uterine parenchyma and the mucous membrane of the uterine canal. While we cannot separate pathologically the inflammation which attacks the muscular tissue of the uterus and its peritoneal covering from that which involves its mucous membrane, both being very generally associated and intercurrent, still, clinically, this division into acute and chronic metritis and endometritis is an old practical distinction which for clinical purposes it is as well to preserve. Most frequently the inflammation commences in the endometrium, and spreads to the muscular structure and cellular elements. On the other hand, the attack may begin in the peri-uterine cellular tissue, or the abdominal or uterine peritoneum. In such a manual as this it is better to take these associated conditions together, and discuss them at the same time.

Causation.—Wounds; injury; any shocks transmitted to the uterus; operations; cold caught during a menstrual period; septic infection; intra-uterine medication; the use of stem pessaries or the uterine sound; gonorrhœa; vaginitis.

Symptoms and Physical Signs.—Rigors; high temperature; pain and tenderness in the hypogastric region; sense of fulness in the vagina, accompanied by heat and sensitiveness; absence of the vaginal secretion; viscid discharge from the uterus, changing to purulent—this discharge is at times acrid and irritating to the skin of the vulva. On digital examination the uterus is found enlarged and very sensitive; the lips of the os uteri have a tendency to gape.

With the speculum the os appears swollen and œdematous; a characteristic transparent and most tenacious mucous discharge fills the os, or at times hangs in shreds from it.

Septic metritis—in the marked preliminary pyrexial symptoms, the great pain, the accompanying peritoneal mischief, and the history of a definite cause, as an operation, injury, septic contagion—is not likely, with the exercise of care, to be confounded with any other affection. The approach of pelvic or general peritonitis is marked by varying degrees of immobility of the uterus, abdominal tenderness, and tympanites. So far as my experience enables me to form an opinion, I may say that I do not believe in any such affection as uncomplicated metritis. I have never seen a case of metritis run its course without some degree of pelvic peritonitis, cellulitis, or endometritis accompanying it.

Diagnosis.—If with the foregoing symptoms we find, on digital examination and the bimanual method, that the uterus is enlarged and sensitive, while the vaginal passage is hot or swollen, we can have no doubt of the nature of the affection.

Prognosis.—This must always be cautiously expressed. Should the inflammation end in abscess, peritonitis, or septicæmia, the issue may prove rapidly fatal. On the other hand, if the inflammation remains localized, and the symptoms yield to active treatment, it may terminate in a few days, or it may pass into a chronic form, leaving the patient with an enlarged (parenchymatous) uterus and endometritis. It is, I believe, impossible to diagnose a metritic abscess. It is hardly necessary to insist on the danger of using the uterine sound in any case of acute inflammation of the uterus or its peritoneal connections.

Treatment.—In acute septic metritis, leeches may be applied (eight to twelve) over the hypogastric region, close

to the pubes; warm compresses should be used; spongiopiline, sprinkled with laudanum and belladonna, applied over the uterus; a thin linseed poultice, covered with oiled silk; turpentine, mixed with laudanum, laid over the lower part of the abdomen, if there be tympanites. An ointment composed of oleate of mercury and morphia (10 per cent.) with extract of belladonna spread on a piece of linen, and laid on the abdomen, under the moist compress or spongio-piline, will be found of use. A Leiter's temperature-regulator may be worn over the pubes. Aveling's coil of the same tubing, which fits into a cup and stem, and which can be worn in the vagina, is an ingenious application of Leiter's plan. The medicines we rely on are, opium, $\frac{1}{2}$ to 1 gr. doses every third or fourth hour; quinine, in doses of 3 grs. every third hour, either alone or combined with the opium. If there be high temperature, then repeated doses of 10 to 20 grs. generally reduce it, if the patient can tolerate these; or Warburg's tincture may be given. The patient must be fed on liquid nourishment, such as milk, chicken-broth, beef-tea. Alcohol should be given, according to the patient's strength, and its effects on the pulse and tongue watched. In the meantime, the vagina should be washed out with warm water, to which some Condy's fluid or carbolic acid is added, and this repeated every four hours. In simple metritis and in endometritis, the treatment must be regulated according to the severity of the symptoms. The vaginal douche of water, from 100° to 110°; local depletion, by means of leeches applied to the cervix or the uterine lancet, may be of service; but as a rule, save in chronic endometritis, it is better to avoid this local tampering. In all cases of acute uterine inflammation, the administration, in the early stages, of a saline is of service: the spirit of mindererus (liq. am. acet.), with sweet spirits of nitre; bicarbonate and citrate of potash; the saline

mixture of sulphate of magnesia and infusion of roses, are perhaps the simplest and most useful. If the bowel be costive and the tongue coated, the administration of a few grains of calomel at bedtime, followed by a saline aperient in the morning, will benefit.

CHRONIC METRITIS.—The student had better disassociate that condition understood by some gynecologists as 'chronic metritis' from the acute metritis which we have just considered. This state is not, as that term would lead him to suppose, the consequence of any acute inflammatory change in the uterine tissues. It is not, or at any rate very rarely is, an *arrested* resolution, as in other inflammatory processes of a chronic character. This remark applies more especially to that form of chronic metritis in which the parenchyma of the uterus is the part principally affected. When the acute inflammation of the mucous membrane has subsided, we find that a chronic state of congestion and catarrh occasionally remains, which becomes aggravated in time. The parenchymatous inflammation which accompanies this chronic catarrh of the cervix or body has arisen independently of any inflammatory change in the parenchyma. It is this hyperplastic change that we have to consider in chronic metritis. At the same time, we cannot, as Schroeder insists, separate from chronic metritis the idea of congestion, swelling, and pain; and consequently the clinical value of the term remains unchanged.

CHRONIC CERVICAL ENDOMETRITIS.—The clinical division of endometritis into cervical and corporeal is of considerable importance, and the old term of 'endocervicitis' still retains its clinical significance.

Pathology.—There is inflammation of the cervical mucous membrane and the glands of Naboth; hypersecretion of glairy mucus, alkaline in character; enlargement and elevation of the papillæ, giving these the appearance of

granulations, so that the cervix assumes a granular appearance (these granulations bleed readily); abrasion of the epithelium. This condition is commonly and erroneously spoken of in practice as 'ulceration.' It is perhaps the most frequently met with of all uterine inflammations.

Causation.—Gaillard Thomas divides the causes of chronic endometritis under two heads, *Predisposing* and *Exciting*. We may group these thus:

1. Predisposing:
   - Constitutional (scrofula, tubercle, chlorosis).
   - Defective diet.
   - Excessive lactation.
   - Frequent labours and subinvolution.
   - Mental causes.
2. Exciting:
   - Displacement.
   - Excessive coition.
   - Exposure to cold during menstruation.
   - Gonorrhœa.
   - Vaginitis.
   - Displacements.
   - Stenosis of cervix.
   - Polypi.
   - Laceration of cervix.
   - Abortion, miscarriage, parturition.

Symptoms and Physical Signs.—Pelvic pains and back-ache, attended by difficulty in walking; leucorrhœa of a viscid character; vaginitis (occasionally); dyspareunia; sterility, from the impediment to the passage of the semen, and the action of the secretion on the spermatozoa; deterioration in the general health.

On examination by the finger and speculum, we find, generally, the os uteri denuded of its epithelium; perhaps some surrounding abrasions or granular degeneration of the

adjacent cervix. There is the typical glairy and viscid discharge occasionally blocking up the cervix, and removed with difficulty. Dysmenorrhœa is a not unusual attendant, or a version or flexion.

Prognosis.—As it is the most frequent, so is it often the most obstinate and inveterate of uterine states. It is the experience of every practitioner that endometritis, both cervical and corporeal, yields occasionally to no treatment. Or, even when we have succeeded in altering the nature of the secretion, and have finally arrested it, a lull in the treatment is followed by a return of the old complaint in as aggravated a form as before. The longer the affection has lasted, and the more viscid and stringy the discharge, especially in those cases of malformed uterus, the worse is the prognosis.

Treatment—Local Therapeutic Measures.—As I have already referred to the methods of applying various substances to the interior of the uterus and the manner of dressing the cervix, I shall only enumerate briefly the most efficient means of treating the catarrhal condition of the cervical canal. The first and most important point to decide is, whether the inflammation is localized in the cervix, or involves the fundus. In this we must be guided by the character of the discharge, and the size and sensitiveness of the body of the uterus.

Assuming that the cervix alone is inflamed, our first step should be to secure such dilatation of the cervical canal and os uteri as will permit of the free flow of any discharge, and also allow room for a topical application to the mucous membrane. This is best done by bilateral incisions, as before described, with a Kuchenmeister's scissors.

The loss of blood consequent upon the incisions will be of service. The occasional passage of a uterine bougie will also secure sufficient dilatation. The uterus must be dressed

repeatedly, and the plug of cervical mucus wiped cleanly away, either with a small piece of dry sponge fixed on a sponge-holder, or with a little cotton-wool rolled tightly round the point of a rough uterine probe. The hot vaginal douche should be used three times daily. A little



Fig. 158.—Dressing the Cervix with Sims's Speculum and Playfair's Probe.

borax, carbonate of soda, boiled starch, Condy's fluid, laudanum, or tincture of iodine, may be added to the water It is well occasionally to deplete the cervix, and about half an ounce to an ounce of blood may be taken. Such therapeutic means as carbolic acid and glycerine, tincture of iodine

and glycerine, chromic acid solution, nitrate of silver, Braxton Hicks' fused crayons, or iodoform, can be used. The nitrate of silver may be applied on a uterine probe, by first fusing a little of the silver salt in a small crucible (Fig. 70) over a spirit-lamp, and then dipping the point of the probe into the cup, so as to get a film of the nitrate of silver on it. But by far the most efficient and, I believe, perfectly safe agent, when applied with due care, is fuming nitric acid. This should be used with cotton-wool, wrapped tightly round a Playfair probe. When applying it merely to the canal of the cervix, it is not necessary to use a canula. Always after applying any of these agents, a glycerine tampon should be passed into the vagina.

General Treatment.—The patient must abstain from coitus; have such outdoor exercise as common-sense will dictate to be suitable to her strength; sufficient rest in the horizontal position is necessary; much standing is to be avoided; change of air, proper tepid bathing of the body, simple yet nutritious diet, moderation in alcohol, long hours of rest, careful attention to the secretions, are all important aids towards curing the disease. The most important medicines are arsenic, quinine, the mineral acids; with the vegetable tonics, bark, columba, gentian, nux vomica. If there be nervous excitement and much pain, the bromides are indicated.

Chronic Corporeal Endometritis.

Pathology.—While it is of the utmost importance to recognise the clinical fact that chronic cervical endometritis *per se* is a frequently occurring affection of the uterus, it must not be thought that endometritis of the body is ordinarily met with apart from the cervical catarrh. On the contrary, every practitioner knows that the corporeal inflammation is nearly always attended by varying degrees

of cervical endometritis. In chronic corporeal endometritis, it happens then, generally, that not only the utricular glands of the body are involved, but also those of Naboth in the cervix. The exaggeration of the natural secretion from the utricular glands is the most prominent sign of the affection. From the account of post-mortem examinations (Scanzoni and Thomas), the mucous membrane is found, at the commencement of this disorder, swollen and reddened; later on, it is paler and of a gray colour.

The glands are finally atrophied, the mucous membrane is deprived of epithelium, and the deeper layers form sprouting granulations, which, at times, assume the appearance of small polypi.

The cavity of the body is enlarged if the disease lasts for any length of time, and there may be a lining of connective-tissue, which takes the place of the natural mucous membrane.

Causation.—Those causes which operate in producing the cervical likewise bring about the corporeal endometritis. I wish, however, to direct special attention to a few uterine affections with which endometritis is constantly associated, or that it follows.

Subinvolution of the uterus.
Abortion and miscarriage.
Obstructive dysmenorrhœa.
Prolonged lactation.
Flexions.
Gonorrhœa.
Vaginitis.

Symptoms and Physical Signs.—Profuse glairy discharge, at times coloured, and tinged with blood, or purulent and shreddy; disorders of menstruation; sterility; all the symptoms of cervical endometritis in an aggravated form. Frequently there is enlargement of the uterine canal, and

increased sensitiveness of the entire uterus, which is, by bimanual examination, found enlarged.

Treatment.—I have already alluded to the various local applications which may be used for the treatment of this affection. Intra-uterine medication has been referred to, and the different methods of applying absorbent, emollient, stimulant and caustic remedies to the uterine cavity. I have also pointed out the special dangers of intra-uterine injections. It is not necessary to refer to these matters a second time. The practitioner will find that any or every form of treatment will fail in some long-existing cases of endometritis. Even after the curette has been used, or nitric acid applied to the cavity of the fundus, discharge returns, and some of the symptoms persist. Of all the agents enumerated, I prefer the fuming nitric acid, applied with the precautions already insisted on. After an interval of rest, if the symptoms continue, a second application may be called for. Let me briefly state what, in practice, I have found to be the most efficient treatment of corporeal endometritis:

1. General treatment, such as that indicated in cervicitis.

2. Dilatation of the internal os with tents or bougies.

3. Application of nitric acid to the cavity of the fundus.

4. The dull wire curette of Sims used to the cavity, especially if from metrorrhagic discharge there is reason to suspect a granular condition, or fungosities or a polypoid state.

5. This treatment, alternated with other intra-uterine medication, especially carbolic acid and iodine.

6. Depletion of the cervix.

7. The vaginal douche, using with it, occasionally, iodine, borax, carbonate of soda, Kreuznach water, and the mother-salt.

8. The persistent use of glycerine and astringent tampons.

9. If there is a displacement, rectifying this, and adjusting a pessary, when the inflammatory state has been treated for some time.

SUBINVOLUTION.—As I have always taught students to regard subinvolution of the uterus as chronic metritis or chronic hyperplasia, and as this view is now generally agreed on by leading gynecologists on the Continent, in America, and in the United Kingdom, it is that which I shall briefly represent here. To comprehend the change in the views of uterine pathologists—from the time when Dr. Henry Bennet so ably advocated the doctrine of uterine inflammation as a cause of chronic uterine enlargement and other morbid uterine conditions, to the present day, when his views are rather to be regarded as historical records than as matters for dispute—the student must consult the works of Gaillard Thomas, Klob, Scanzoni, Barnes, Graily, Hewitt, and other writers.

Pathology.—The entire organ is enlarged, its walls are thickened, and its cavity increased in size. The student obtains the best idea of the causes of this increase, when he recollects the changes which occur in the tissues —muscular, cellular, lymphatic, and vascular—of the pregnant uterus. After conception, all these tissues are enlarged. The period of complete development is arrived at when parturition occurs. After labour there is a process of 'retrograde metamorphosis,' when the uterus, especially during the puerperal month, passes through the series of changes which constitute involution. Absorption of *débris*, fatty degeneration of the muscular tissue, and formation of new elements, are the means by which this change is accomplished and completed, in a period of from six to eight weeks. Should this change be arrested

from any cause, we have an absorbed fatty *débris;* enlarged muscular fibres, with embryonic elements of new tissue; hypertrophied areolar tissue; increased size, both of the bloodvessels and lymphatics. While the muscular elements remain thus stationary, or after a little time commence to atrophy, the connective-tissue is increased, and the uterus is arrested in a state of general congestion, with enlarged vessels. According to Finn of St. Petersburg, the hyperplasia of the muscular fibres is an essential part of the process, the augmentation in the connective-tissue influencing it but little. The number of muscular fibres is always increased. There is no difficulty in understanding why hyperplastic deposits and rapid development of connective-tissue follow. This hyperplasia is the essential pathological condition of the affection. As occurs elsewhere, the connective-tissue growth strangles the vessels, and consecutive atrophy follows. Change in colour and size of the uterus is the result. The last stage is one of contraction and shrinking. The practitioner meets constantly with cases in which, with cervical endometritis, the uterus is enlarged and subinvoluted.

I have at the present time four patients under my care, all having the cavity of the uterus enlarged to the extent of three inches and over, suffering from chronic endometritis. None of the three have had children. One is unmarried, and has a sclerosed state of the anterior wall of the cervix; a second is also unmarried, and suffering from anteflexion; the other two are married, and have suffered from endometritis from girlhood: they never conceived. The chronic congestion—which leads to effusion, hypertrophy, enlargement of the uterus, and hyperplastic change, with cellular tissue formation—may, and frequently does, arise in other ways than as a sequence of pregnancy.

Causation.—Parturition and neglect during the puerperal

month; rising too soon after delivery, standing or over-exertion; puerperal peritonitis, or metritis; laceration of the cervix; endometritis, corporeal and cervical, and the causes which produce these states; frequent pregnancies; prolonged lactation; versions and flexions.

Diagnosis.—By digital examination, if the cervix be involved, we detect a rather open os, which is swollen and painful; a sensitive but hard cervix, which has descended in the pelvis; and the uterus either anteverted or retroverted, more frequently in the former position. By the bimanual examination the body of the uterus is found enlarged, and by careful palpation the fundus is discovered, unless it be retroverted, above the pubes. The uterine sound passes for the extent of three or three and a half inches before it is arrested at the fundus. The history of the case, pointing either to an old endometritis, to recent parturition or abortion, or irregularity in the menstrual flow (either amenorrhœa or metrorrhagia), will confirm the diagnosis. The chance of pregnancy existing must be carefully remembered; and if any doubt exists, it is better to postpone the passage of the uterine sound. There are some *negative signs*, it is well to remember. The cervix is not soft; there is no progressive enlargement of the uterus from month to month; the uterus does not generally enlarge beyond from three and a half to four inches; there is no cachexia; the leucorrhœal discharge, if any exists, is not foul-smelling. With these facts in our mind, we are not likely to mistake chronic hyperplasia for either early pregnancy or scirrhus of the uterus.

Symptoms.—There is scarcely any symptom, either constitutional or local, attendant upon a uterine affection, that a woman afflicted with subinvolution of the womb may not suffer from. To enumerate these would be to recapitulate all the various local and pelvic pains and reflex disturbances

which arise from chronic endometritis and enlargement of the womb, and from displacement. The intensity of the symptoms will depend on whether the fundus alone, or the cervix, or both, are enlarged. The more prominent symptoms usually are : difficulty in walking, lumbar and sacral pain, pelvic distress from pressure on the bladder or rectum, nausea, dyspareunia, and dislike for food, and various nervous disorders. If the fundus be the part principally engaged, there is very often menorrhagia or metrorrhagia.

Treatment.—If inflammatory conditions of the endometrium are present, these must be treated in the manner already indicated by intra-uterine caustics and medication. The vaginal douche is essential. The uterus should at periodical intervals be freely depleted, and the glycerine tampon used regularly. Gaillard Thomas (after Aran) advises free vesication of the cervix, through a cylindrical speculum which embraces it tightly. Vesicating *collodion* is used. The patient rests in bed after its application, and a glycerine pledget is worn. The discharge of serum occurs within twelve hours. Any laceration of the cervix has to be closed.

In the treatment of both chronic hyperplasia and cervical endometritis, the iodized pledgets of absorbent wool (Messrs. Savory and Moore, and Corbyn and Co.), dipped in glycerine and applied to the cervix, are often of benefit. They may be retained in position by a tampon of salicylic acid wool and glycerine. But perhaps the most important portion of the treatment consists in attention to the general health, and in securing judicious rest without unnecessary and prolonged confinement, which often leads to a state of chronic invalidism.

Sexual intercourse must be avoided, or only indulged in at long intervals. Weir Mitchell's rest plan may be tried, in the manner already detailed. To those who can afford

it, a course of waters and baths at Kreuznach, Kissingen, or Ems may be recommended; Schwalbach or Barréges, if a ferruginous spa is indicated. At all times, change of air, temporary residence by the seaside—and no country is so rich in health-giving seacoast resorts as England—will do much to assist treatment.

CHAPTER XVI.

LACERATION OF THE CERVIX.

THIS lesion, varying in the number of rents or fissures of the cervix, their depth, and the degree of pouting of the cervical canal, is the consequence of labour. It results most frequently from manual or instrumental interference, and too early rupture of the membranes. In short, it is often the fruit of 'meddlesome' midwifery and hastily conducted labours.

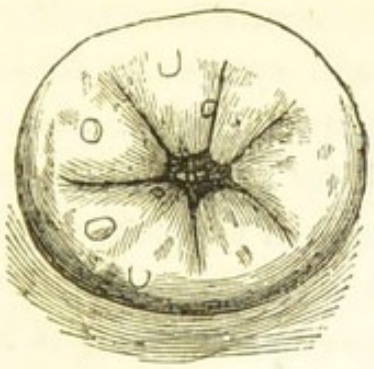


FIG. 159.—Stellate laceration (Emmet).

The rent is generally transverse, for, as Goodell explains, the fissure-line, when lying in this direction, crosses the axis of motion of the uterus, and hence the tendency to separation of the flaps. At other times the fissures are multiple, as in this drawing after Emmet.

According to the same authority, laceration is most frequent on the left side, this being attributed to the position of the child's head in the right oblique diameter, the occiput lying anteriorly, and to the left. The percentage of women

who suffer from uterine disease, who are subject to laceration of the cervix, has been variously estimated by leading American writers at from ten to forty per cent. (Mundé, Ambrose Pallen, Barker, Emmet, Goodell).

That the cervix uteri is more or less torn in a large proportion of labours, all will admit. But a large percentage of such rents close spontaneously, and a considerable number cannot be said to cause either ill consequences or any suffering to the woman.

Practitioners must not, then, take up any extreme view of the necessity for interference in every case of lacerated cervix. Its relation to morbid womb conditions is now generally acknowledged, and we have especially to thank American gynecologists for this, as for many other valuable additions to uterine pathology. We have, however, to avoid being influenced in practice by an exaggeration of the results which follow from a laceration. A careful examination of the uterus will enable us to judge of the case demanding operative interference, and the one which may safely be dealt with by palliative measures, or let alone.

Diagnosis.—Though in the majority of cases there is not any difficulty, with a careful examination, in discovering a laceration of the cervix, still, there is little doubt but that it often escapes detection. This is more apt to occur when there is a considerable abrasion of the cervix; the so-called 'ulceration' of the os uteri.

When the cylindrical speculum is used, this is more likely to happen, for we may press the lips of the fissure together, and thus close the torn lips of the mouth of the womb.

An examination for a laceration of the cervix *must be* made in this manner: the woman is placed in the semi-prone position, and Sims's speculum is applied; a tenaculum is hooked into each lip of the rent, and the two are drawn

forwards, when, if it be a laceration, the raw surface disappears, and the characteristic cleft is left.

Consequences.—Erosion of the os and cervix; eversion of the cervical canal; subinvolution; endometritis; perimetritis; cellulitis; cicatrization of the cervix, and sterility. There is little doubt that it predisposes to epithelioma and malignant disease of the cervix.

Symptoms.—These will depend, in urgency and severity, on the extent and depth of the laceration, and the inveterate character or the intensity of the attendant complications. If the laceration is chronic, and has not skinned over, we find frequently an easily-bleeding cervix, menorrhagia, endocervical discharge, pain in walking, loss of sexual desire, neuralgia and reflex nervous disturbances.

Treatment.—It is either palliative or operative. The palliative treatment consists in rest, warm vaginal douche, local depletion, treatment of the eroded cervix, glycerine tampons, astringent douches; such remedies as borax and glycerine, tannin and glycerine, carbolic acid and glycerine with iodine, and the other means spoken of for the treatment of menorrhagia. Preparations of the mineral acids with quinine and bark should be given. If the womb is in a state of subinvolution, ergot may be administered.

To help in the skinning over of the eroded surface, and the glazing of the congested papillæ, preparations of iodine, chromic acid, weak nitrate of silver, and perchloride of iron solutions may be used locally.

Emmet advises, as a palliative measure, the passing of a silver suture through the flaps to prevent them from gaping.

Operative Measures.—These are not to be thought of until by such palliative treatment as that just detailed the uterus is brought into a fit state for operation, and all symptoms of inflammation or perimetritis have disappeared. The

week after a menstrual period is chosen. The bromides may be given for a few days previously, and a hot vaginal douche to restrain the bleeding should be used immediately before the operation. The instruments required are a



Fig. 160.—Sims's Elbow Scissors.



Fig. 161.—Emmet's Needle and Holder.

vaginal douche, a duck-bill speculum, long-handled knife, curved scissors, tenaculum, some short lance-headed needles of Emmet or Sims, needle-holder, a reel of Bantock's non-absorbent silk, or silver wire, and forceps.

Trachelorraphy is thus performed. The patient is brought

(anæsthetized, though not necessarily, as the operation is not very painful) well to the edge of the bed or operating couch; the cervix is exposed, and drawn down with the

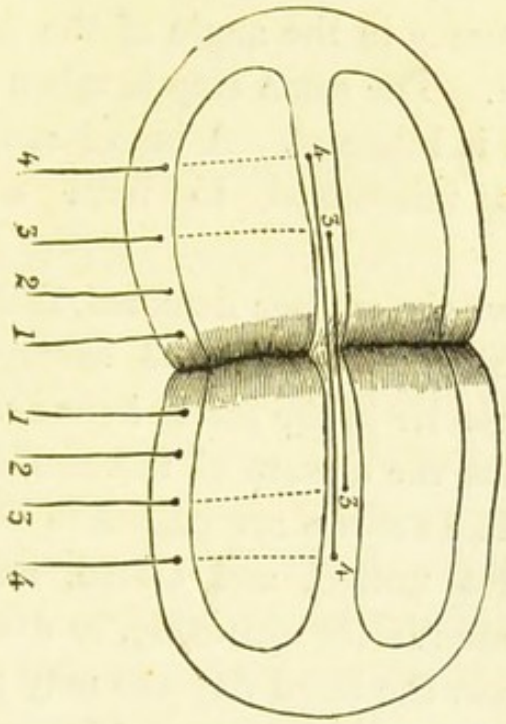


FIG. 162.—Emmet's operation—denuded surface and sutures (Emmet).

volsella, and kept in position by an assistant. The edges of the laceration are first brought into a position to judge

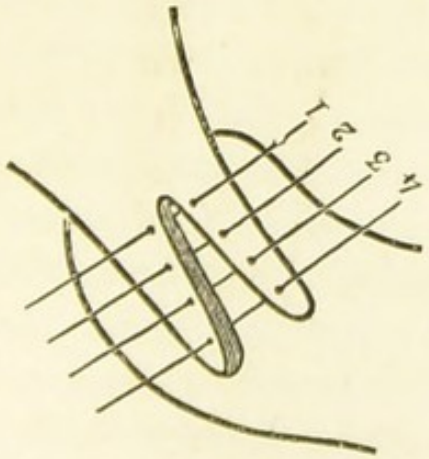


FIG. 163.—Sutures passed.

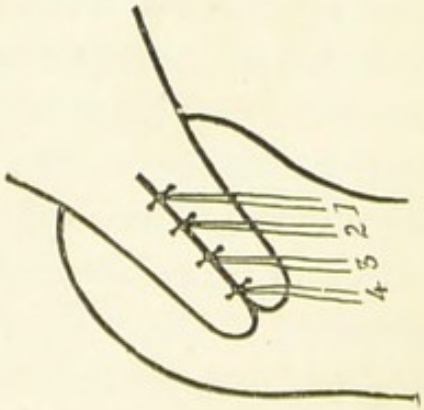


FIG. 164.—Sutures applied.

how far the uterine surfaces have to be denuded. A stout rubber watch-spring ring is slipped on to the base of the

cervix to control bleeding. The vagina is washed out with some carbolized water.

The operator begins by denuding one side of the laceration, and removing the tissue, as shown in the drawing. The cicatricial tissue in the angle of the laceration is completely removed. The same step is taken on the other side if the laceration is bilateral. A broad strip of the cervical surface is left untouched, to form a future cervical canal.

Fig. 162 shows the surface denuded, and the course of the sutures, after Emmet. Fig. 163 exemplifies the way in which the sutures lie in the cervix before they are tightened. Fig. 164 explains the closure of the cervix and the tying of the sutures. The sutures are passed in the order 1, 2, 3, 4. One side is first united, and closed, and afterwards the other. It is better, after operating, to draw off the patient's urine. But from the third day she may pass water herself, leaning forwards on her knees. The vagina is regularly washed out with some weak disinfectant wash. The sutures may remain from seven to ten days.

CHAPTER XVII.

EROSION AND GRANULAR DEGENERATION OF THE CERVIX.

Pathology. — The term 'ulceration' of the uterus has almost disappeared from the vocabulary of the gynecologist. This remark refers to ordinary inflammation, as the malignant and syphilitic ulcers have still to be described. But that condition, which was erroneously regarded as one of ulceration, has been proved to be nothing more than a desquamation of the superficial epithelial layer covering the lips of the os uteri and cervix. This is attended by increased vascularity and growth of villous projections, which protrude on the surface under the single layer of epithelial cells. Up to a comparatively recent date, it was taught that the bright spots seen within the area of the eroded or granular patch were hypertrophied papillæ, enlarged and highly vascular. Thus Scanzoni describes an 'aphthous' erosion, in which the mucous membrane is denuded of epithelium; and Schroeder includes a notice of 'ulcers' of the cervix with 'erosions,' and describes a papillary form of erosion in which the papillæ develop into 'granular elevations.' According to the researches of Ruge and Veit, the raw surface is covered with a single layer of epithelium, and the supposed papillary granulations are neoplastic formations. Recesses are formed by extensions inwards of the epithelium, and thus a papillary or villous appearance is given to the erosion. Friction, even such as is necessi-

tated in wiping away the thick purulent secretion which is found covering the cervix, causes bleeding from the superficial bloodvessels. This state has received the name in this country of 'cock's-comb' ulcer or granulation. But the accompanying change in the follicles of the cervix is not to be lost sight of. The glands are distended, the openings are gradually closed, through swelling of the adjacent tissue, or the formation of new connective-tissue. Cysts are formed, some of which may burst on the surface and discharge their contents. This cystic degeneration may involve the entire cervix.

Causation.—Erosion of the cervix, with cervical catarrh, is perhaps the commonest of all the diseased conditions of the uterus which we are called on to treat. This does not surprise us, when we remember that it may attend on all the other congested states of the uterus and cervix that we meet with in practice: as, for example, displacements, lacerations of the cervix, and vaginitis. We find it present in tubercular, syphilitic, and strumous constitutions. It may be induced by the use of a pessary. I feel certain that this latter habit acts more frequently as an exciting cause than is generally thought.

Symptoms and Physical Signs. — These will in great measure depend upon the degree to which the uterus is involved in any coexisting disease, such as endometritis, hyperplasia, vaginitis, gonorrhœal infection. Coloured leucorrhœal discharge, pain when walking or standing, lumbar and sacral pain, dyspareunia, general lassitude, inability to undergo fatigue or any exertion, loss of appetite, are among the symptoms most frequently complained of. On digital examination, the os uteri feels soft and moist, and the granular or eroded surface is felt by the finger. When the speculum is introduced, the os and adjacent cervix are covered with a creamy purulent discharge, per-

haps tinged with blood. When this is wiped off with a little soft cotton wool, the underlying eroded or granular surface is seen. Frequently there is a fissure of the cervix, the result of an old laceration. The os and cervix bleed readily when they are wiped with the sponge or wool. If endometritis coexist, the characteristic discharge issues from the os uteri, viscid and glairy. If there has been gonorrhœa, the uterine discharge will often be found purulent, of a dirty yellow colour, covering like a layer of discoloured cream the surface of the wool. The discharge has a slight fœtor. In these cases also there is accompanying vaginitis, and probably, if the disease be chronic, an accompanying granular condition of the vagina.

Treatment.—The treatment may be thus summarized :

General.—Rest : prevention of vaginal friction by a vaginal rest ; the adjustment, if the uterus be displaced, of a suitable pessary ; the horizontal position ; avoidance of exercise and all sexual intercourse.

Tonics : Quinine and arsenic ; mineral acids and bark ; the combination of the bromides with vegetable tonics.

Local.—Vaginal douches, with any of the following added to the water : borate of soda, sulpho-carbolate of zinc, acetate of lead, Condy's fluid, carbolic acid, alum, tannin (℥ss. of the borate of soda and ʒi. of any of the other remedies added to a gallon of water).

Topical Applications.—Nitrate of silver (the fused sticks before referred to, or the solution in different strengths) ; carbolic acid and glycerine ; nitric acid ; Richardson's styptic colloid ; pigment of iodine (iodine ʒi., rectified spirit ℥i., flexile collodion ℥ss.) ; chromic acid (ʒi.—℥i.) ; iodoform ; perchloride of iron solution (ʒi.—℥i. glycerine) ; chloride of zinc (ʒi.—℥i.).

Vaginal Tampons of glycerine, glycerine and tannin, glycerine and boracic acid.

Ointments (to cleanse and soothe irritation) of vaseline, with carbolic acid, iodoform, tannin, belladonna, morphia. (Coumarin, a few grains to the ounce, disguises the odour of iodoform.)

Depletion.—Great benefit will often follow the occasional use of the uterine lancet. When used, three or four incisions of the usual depth should be made, and a few ounces of blood taken. If there are any exuberant granulations they may be snipped off with the scissors.

Vaginal Suppositories. — Those of belladonna, opium, acetate of lead, tannic acid, oxide of zinc, and iodoform are some of the best.

Management of Endometritis with Laceration of the Cervix.—Should these affections coexist, they must be dealt with as already indicated.

There are some general hints for the management of these granular states of the os and cervix which I think it well to add :

1. Give a guarded opinion in reply to the question of the patient or friend, as to the length of time a severe erosion or granular condition of the cervix will take to heal. The affection, especially if there is any coexisting disease of the uterus, must be tedious.

2. A fair judgment of the tendency to cure may be formed from the subsidence of the villous projections ; the disappearance of granulations ; the paleness of the exposed surface, and its diminished vascularity ; the tendency to skin over ; the diminution of discharge.

3. There is the danger of *over-treating* this affection by the too frequent use and prolonged application of powerful caustics or astringents. The strength of every application must be regulated by the severity of the case, and determined by the surgical instinct of the practitioner. No routine rule of using this or that strength of any agent should be followed.

4. Place as much, if not more, reliance on physiological rest and soothing applications as on other local medication.

5. Do not pronounce the case *cured* until the surface has completely healed, and the patient has been subsequently under observation for a little time.

FOLLICULAR DEGENERATION.—Three pathological conditions of the os uteri and cervix are closely allied to each other, both in their etiology and histology; these are: follicular degeneration, mucous polypi, and follicular hypertrophy. All three are commonly associated with either a congested, eroded, or lacerated cervix, and eversion or 'ectropion' of the lips of the os uteri. In all three there are congestion and hyper-distension of the glands of the cervix (ovula Nabothi); this leads to a cystic condition, and these cysts either rupture, or through hypertrophy of the subjacent tissue are forced forwards in the form of polypi, or in the external vaginal surface of the os uteri they form grey or yellow cystic projections, which frequently have purulent contents, but are more usually filled with colloid matter. Sometimes the collapse of the follicle is followed by a depression on the surface of the cervix. This little pit slowly disappears. The mucous polypi are found rather in elderly multiparæ. The contents of the cysts are granules, mucous corpuscles, and epithelial cells; they are lined by a basement membrane (Farre). If the cystic degeneration of the follicles of either one or both lips of the os proceeds unchecked, and there is an increase in the connective-tissue of the cervix, a state of general hypertrophy ensues, attended at times by fungous growths. This 'follicular hypertrophy' (Schroeder) of the cervix we thus see commences in follicular degeneration and cyst-formation; the polypoid character of the cystic growth being, in this instance, prevented by the investing and resisting epithelium of the vaginal surface of the cervix.

Diagnosis.—The presence of the cysts, and the nature of their contents; the appearance of the characteristic small polypus protruding from the os; the soft, cystic-looking, and enlarged lip, will readily distinguish the three conditions. Should a cyst rupture, and an apparent ulcer form —in this softened state of the cervix, a mistake might be made from the time of life of the patient—or some malignant ulceration may be suspected. Such an error I have known committed in a case in which I subsequently ablated one lip of the os for cystic hypertrophy.

Treatment.—Cysts must be opened and the contents

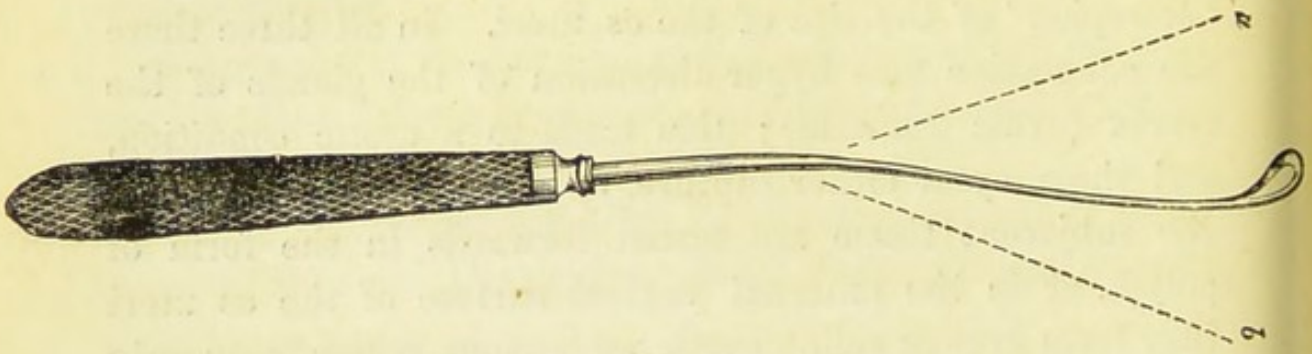


Fig. 165.—Sims's Curette.

evacuated, and chromic acid, carbolic acid, or nitric acid applied to the cavity. A mucous polypus must be removed with scissors or forceps. If we suspect the presence of small polypi inside the cervix, the canal must be dilated, and resort must be had to the curette, forceps or long scissors for their removal. Nitric acid (Atthill) or chromic acid may be used to destroy very small polypoid projections into the canal. In very obstinate cases of cystic degeneration and follicular hypertrophy, the diseased vaginal portion of the cervix has been ablated with either scissors, knife, or the wire of the galvanic écraseur.

CHAPTER XVIII.

PERI-UTERINE AND OTHER INFLAMMATIONS.

THERE are four forms of inflammation, which may well be considered in connection with each other. These are :

1. Perimetritis.
2. Parametritis.
3. Ovaritis.
4. Salpingitis.

PERIMETRITIS.—By perimetritis we mean inflammation of the pelvic peritoneum, and limited to it. I follow the teaching, amongst others, of such well-known gynecologists as Matthews Duncan, Schroeder, and Gaillard Thomas, in regarding parametritis (pelvic cellulitis) and perimetritis as totally distinct affections. The frequency with which perimetritis is met in practice may be inferred from this statement of Dr. Matthews Duncan : 'Adhesive perimetritis is almost certainly second in point of frequency among the diseases of women, the first position being held by uterine cervical catarrh ; in post-mortem examinations of women no pathological condition is more frequently discovered than adhesions between the internal genital organs and neighbouring parts, especially about the ovary.' Any one who, like myself, has spent a number of years (ten) in the anatomical theatre, and who has been engaged in making dissections of the female pelvic viscera, will verify this conclusion of Dr. Duncan.

Causation.—Acute metritis and endometritis ; ovaritis ;

salpingitis; arrest of menstruation (due to the effect of cold); septicæmia; abortion and parturition; operation on the uterus and vagina; the passage of a uterine sound; the use of tents; gonorrhœa; imperforate hymen and concealed menses; ovarian cysts; uterine fibroids; tubercle; cancer.

Pathology.—The division of perimetritis (Matthews Dun-

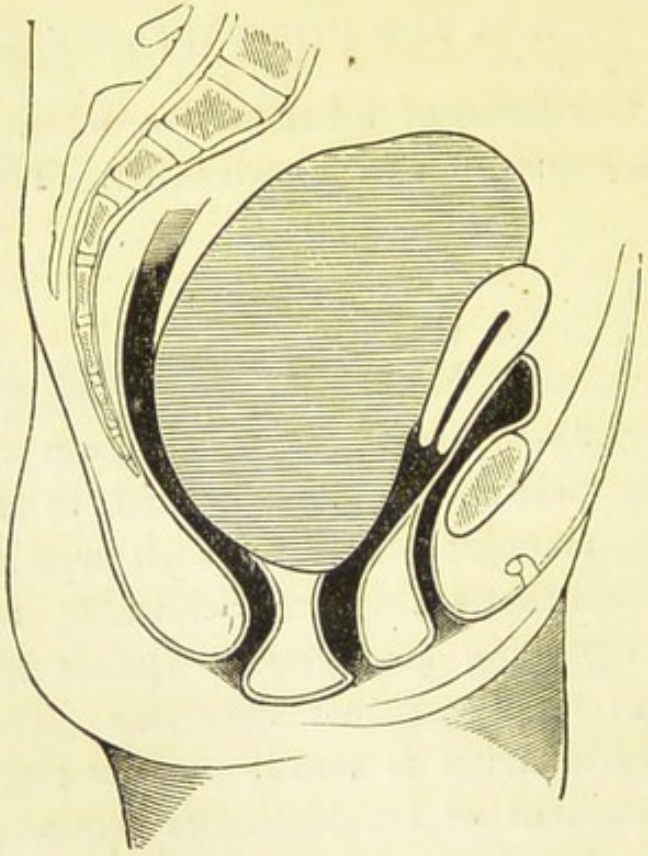


FIG. 166.—Collection of serum in the peritoneal cavity (Perimetritis Serosa), Schroeder.

can) into three kinds—adhesive, serous, and purulent—answers all practical purposes. In the first variety there is an exudation of plastic lymph from the engorged and turgid peritoneal vessels. This results either in temporary adhesions between the pelvic viscera, or in permanent adhesions which remain for the lifetime of the individual, causing dragging and displacement of the ovaries and Fallopian tubes, binding these down, or connecting them with each other. These adhesive bands or membranous

layers may shut off collections of pus or serum, forming cyst-like cavities. Such an enclosed collection is shown in the accompanying drawing from Schroeder.

In the serous and purulent varieties an exudation of serum or pus occurs into the peritoneal cavity, and naturally first collects in the most dependent situation, which is Douglas's pouch, pushing upwards the coil of intestine which is contained in it when the bladder and rectum are empty. Such an exudation of serous fluid, as it increases in quantity and becomes harder, may press the uterus forwards against the pubes. At other times the exudation occurs at the sides or all round the uterus, or it may rise over the fundus of the uterus and pass above the pelvic brim into the abdominal cavity. A limited collection of serum or pus may form between coils of intestine; this, after absorption or rupture, may leave adhesions and inflammatory thickening of the peritoneum. The quantity of pus which may thus collect in the peritoneal cavity is very large; take, for example, the following case, reported by me in the year 1881.

J. C., aged 32 years, was admitted into the Cork South Infirmary with a history of pelvic peritonitis after parturition. The history of pain and enlargement commenced a week after labour. There was enormous distension on admission (April 15th, 1881). The patient was aspirated on the 16th, and over *nine pints of pus* drawn from the peritoneal cavity. This quickly re-secreted, and on May 2nd *five pints* more were taken to relieve the sense of hyper-distension, and consequent uneasiness. On May 13th, the abdomen was opened antiseptically; all the pus was evacuated through an incision of about two and a half inches. The peritoneum was greatly thickened; it was hooked carefully up and held in contact with the abdominal parietes; then a Keith's glass drainage-tube was passed

and held in position in the wound by sutures; the peritoneum was stitched from within to the abdominal wall as in ovariotomy; a drainage-tube with a wire coil inside was attached to the glass tube, its other end resting in a bucket of carbolic water, which was placed at the side of the bed. The pus drained into this for nearly three weeks. The glass tube was taken out each day, and the wound was dressed under spray, the orifice was carefully cleansed, and the rubber tube well washed out with carbolic solution, the end of the tube being corked under the carbolic water whenever the latter had to be changed. Suffice it to say that the patient lost, at the lowest calculation, some forty pints of pus while in hospital. For the last five weeks the opening was kept patent to secure drainage, by a bunch of carbolised horsehair carried well into the cavity. The discharge gradually ceased. A hard mass filling the pelvic brim remained. This finally disappeared. The woman became quite strong and well, had a good appetite, and was only anxious to leave the hospital. (I had to leave home for a little time.) During my absence the patient, having been up and out for several days, suddenly complained of pain; symptoms of collapse set in with intense pain and vomiting, and she died in twelve hours from the onset of the symptoms. The house surgeon made a post-mortem examination, and found that a recent rent had occurred in the pelvic peritoneum, through which some fetid pus had escaped into the general peritoneal cavity; adhesions had formed which protected the bowels, but the peritoneum was greatly thickened in parts. A funnel-shaped canal led up to the abdominal opening, and some fetid pus was found at the side of the uterus. I regret much my absence from the autopsy of this most interesting case. I feel confident that in any similar case, a free abdominal opening, with a counter opening in the vaginal

roof—thorough drainage being obtained and maintained—might completely cure. The patient lived nearly four months from the date of the abdominal section, dying on August 4th.

The abscess may open into the rectum, the vagina, the bladder, and, very rarely, into the uterus. It may point in the groin, the upper part of the thigh, in the region of the sciatic notch, in the lumbar region. I have had under my personal care cases which have burst into the rectum, vagina, bladder, and the groin.

A sudden escape of pus into the general peritoneal cavity is, as a rule, followed by fatal peritonitis. Or decomposition of the pus may cause fatal septicæmia. But not unfrequently absorption of large collections of fluid takes place, and the patient returns to health. Resorption, however, is generally a very slow matter; nor does it often happen without leaving some exudation or adhesion, which feels like a circumscribed tumour in the pelvic roof.

Symptoms and Physical Signs.—The symptoms will depend on the nature of the inflammation, whether it be acute or chronic. In acute pelvic peritonitis, there are generally rigors, high temperature, rapid pulse, coated tongue, some gastric disturbance, vomiting. These symptoms are accompanied by abdominal pain, tenderness, and tympanites. On examination the abdomen is found very sensitive to pressure; the vagina is hot, perhaps swollen, and we may, comparatively early in the attack, be able to define a fluctuating swelling in the posterior vaginal cul de sac, or laterally through the vaginal roof. These signs of the affection are soon followed by the characteristic one of *fixation of the uterus.* There is a hard 'board-like' feel (Doherty) anteriorly or posteriorly, the effusion displacing the uterus, or encircling it. Should the disease run an unfavourable course, the symptoms of septicæmia or general peritonitis set in; the vomiting increases; the

temperature rises to 105° or 106°; the pulse is rapid and wiry, the countenance becomes more anxious, abdominal pain and tenderness and tympanites increase, and delirium sets in. In other instances the perimetritis is far more insidious in its onset, and the symptoms are so obscure that no local examination is made until the exudation is discovered, which may have filled Douglas's space and fixed the uterus. Persistent abdominal pain varying in severity, or some pelvic distress either in the bladder or rectum, first calls for an examination, and the swelling is discovered. Such cases may run on for some time before advice is sought, which they occasionally do, as much for the loss of appetite and wasting as for the local distress.

Prognosis.—Perimetritis is always a dangerous and serious affection. The principal dangers are: general peritonitis, pelvic abscess and septicæmia, metritis, uterine displacements, atrophic states of the ovary, obliteration of the Fallopian tube, dysmenorrhœa, and sterility.

Treatment.—In *acute* cases, opium in grain doses; an ice-bag on the abdomen; the application of Leiter's temperature-regulators; leeches to the hypogastrium; enemata; relief of the bladder by the catheter, if necessary. In the latter stages, vesication over the hypogastrium with the liquor epispasticus, followed by a stupe of spongio-piline laid over the vesicated surface; also the application of iodine.

In chronic cases, careful regulation of exercise; avoidance of chills and exposure to cold; great care at the menstrual periods; rest in bed should be insisted on if there be periodical exacerbations of temperature and swellings; no sexual intercourse should be permitted. The patient may be treated with warm hip and iodine baths, applications of iodine externally (iodine pigment, made of iodine ʒi., mastich ʒi., rect. spt. ℥i.), warm compresses, the warm vaginal douche, with laudanum added to the water. A few leeches, when

the patient is threatened with recurrence of attacks, may be applied near the anus or in the vaginal region. The bromides, with iodide of potassium, are indicated; and if attacks of sickness recur, such medicines as bismuth, hydrocyanic acid, chloride of calcium, or effervescing mixtures of bicarbonate of soda and potash may be given. If a stimulant is required, some dry champagne, or small doses of brandy, with soda or seltzer water, are perhaps the best to select. But, on the whole, stimulants are better avoided, or should only be given in very moderate quantities, and abandoned when the occasion for their employment has passed.

In regard to the question whether the fluid should be evacuated or not, I may quote the rule laid down by Gaillard Thomas: 'If, in spite of the sero-purulent collection, the patient be doing well, and do not suffer from the local trouble, it should be left to empty itself spontaneously. If, on the other hand, the patient is suffering from the collection, be not progressing favourably, and the evacuation be perfectly practicable, it should be accomplished.'

Parametritis.—Peri-uterine Cellulitis.

By the term parametritis (pelvic cellulitis) we mean a phlegmonous inflammation of the connective-tissue of the pelvis; it occurs most frequently as the result of septic absorption. Hence its frequent association with the puerperal state.

Causation.—Parturition and abortion; traumatic causes, as operations on the uterus; injuries; tents; intra-uterine stems; ovaritis; caustics applied to the uterine cavity.

Pathological Anatomy.—The extensive distribution and connections of the cellular tissue of the pelvis explain the different positions in which the exudation occurs in parametritis; in the layers of the broad ligaments behind the

uterus and rectum, upwards along the psoas muscle to the kidney, into the iliac fossa, occasionally, between the rectum and uterus and the uterus and bladder, and downwards into the cellular tissue of the gluteal region by the sciatic notch. The ovaries and Fallopian tubes are nearly always involved. Dr. Matthews Duncan describes a form of parametritis as well as perimetritis, in which remote collections of pus or serum occur in connection with the local inflammation, or after it has subsided, as in a case quoted by him where the swelling appeared in the neighbourhood of the umbilicus. The stages of the inflammation are the same as those of phlegmon occurring elsewhere—(*a*) congestion, (*b*) effusion, and, if resolution does not happen, (*c*) suppuration.

The inflammation may not pass beyond this second stage. With regard to the effusion or exudation, there are many degrees of intensity, from a slight swelling in either broad ligament to a considerable infiltration at both sides of the uterus, leaving a hard mass that fills the entire upper part of the pelvis. This exudation pushes the uterus to either side, out of position, or presses it and the vaginal roof downwards, forwards, or backwards. The effusion at first feels soft to the finger ; it then gradually hardens, and, if abscess forms, it again softens, and fluctuation may be detected. Though, in the commencement, the exudation pushes the uterus to the side opposite to the effusion, later on, when absorption has begun, it is drawn to the side of the exudation (Schroeder).

Diagnosis.—I have already tabulated the most reliable points of distinction between perimetritis and parametritis. Easy though it may seem to the experienced hand, it is not at all so simple a matter for the young practitioner to diagnose some hard parametric exudations, especially those situated anteriorly or posteriorly, from fibroid tumours of the uterus. This arises from the fact that the tumour can

very rarely be moved apart from the uterus; the womb moves with the tumour, so that it is difficult to isolate it. These few diagnostic traits will help to differentiate the effusion of parametritis from other swellings liable to be mistaken for it (see pp. 262, 263).

Symptoms and Physical Signs.—Acute parametritis is marked by the following symptoms: rigors, increase of temperature (102-104°), rapid pulse, pain in the hypogastrium, general febrile disturbance, rectal discomfort and constipation; the vagina during this stage is found hot and swollen, and there may be vaginal pulsation. Later on, a careful vaginal and rectal exploration will enable the examiner to detect, in some portion of the vaginal roof, or posteriorly in the utero-rectal space, a small painful swelling, the commencement of the exudation.

Later still, the 'board-like' feel of the induration and the displacement of the uterus and its fixed position leave little room for doubt. The decubitus is more frequently to the affected side (Duncan). There is a very characteristic symptom which occurs also in perimetritis, that is, retraction of the thigh. This happens when the iliac or psoas muscles are involved, and an abscess has formed, or is forming, in the neighbourhood of or involving the psoas muscle.

But perhaps the most vital fact for the practitioner to remember in connection with parametritis is the essentially chronic and insidious nature of the affection in many instances. It is not necessary that the patient should complain of any marked symptom which would attract the medical man's attention specially to the uterus or the pelvic genital organs. I have seen such cases where pelvic mischief was not even suspected, and yet extensive parametritis had for some months been progressing.

Not long since I had such a case, in which rectal dysen-

PARAMETRITIS.	PERIMETRITIS.	FIBROUS TUMOURS.	HÆMATOCELE.
Connected more frequently with abortion; parturition; operations on the uterus; septic causes.	Coming from similar causes, but frequently also from imprudence during menstruation; from ovaritis and the escape of fluid into the peritoneal cavity; gonorrhœa a frequent cause.	The characteristic, slow and more uniform growth, and the history of local pelvic distress.	Caused by some irregularity of menstruation; traumatic causes; atresic conditions of uterus, vagina, or vulva.
Acute and febrile symptoms.	Acute and febrile symptoms more severe; nausea, vomiting, tenderness, tympanites.	Absent. History of menorrhagia and metrorrhagia.	Sudden appearance; signs of hæmorrhage; occurs without preceding symptoms of inflammation.
Hardness more likely to be lateral.	Hardness posteriorly or anteriorly.	Distinctly uterine.	Symptoms of peritonitis follow.

Swelling easily reached from the vagina; soft and doughy at first, then becoming hard; softening again if pus forms.	Swelling generally retro-uterine; if lateral, likely to be out of reach of the finger.	Swelling incorporated with the uterus, and moving with it; tumour hard from the first and round; characteristic feel of cervix.	Swelling soft at first; gradually becomes hard.
Pain present. Not so painful as perimetritis.	More painful.	Not sensitive; pain may be altogether absent.	Pain follows the formation of the swelling.
Retraction of the thigh.	Retraction of both thighs.		
Uterus, more or less movable; displaced laterally.	Uterus less movable; frequently fixed.	Uterus generally movable.	Uterus displaced according to the site of the hæmatocele.
Swelling not so diffused.	Swelling diffused; hard at first, gradually softening.		Swelling more frequently found in the posterior cul-de-sac or in Douglas's space.

teric symptoms completely masked those of cellulitis, and absorbed the attention of the physician. From the history of the case there had been evidently, in the first instance, endometritis. The patient was unmarried. When I saw her, the uterus was quite fixed by an exudation, which surrounded it, and which pressed the uterus back against the rectum, so that it occluded the cul de sac of Douglas; this explained the rectal distress.

Pain in walking, a throbbing sensation in the uterus, general loss of health, some nightly rise of temperature or hectic, may be the only symptoms present in these chronic cases. Following on either the acute attack or the chronic form, there is gradual wasting and loss of weight, and, in some instances, emaciation. The patient is worn down by the suffering and the local distress. If the exudation terminates in suppuration, and an abscess forms, relief may rapidly be afforded through the bursting or the evacuation of the pus. But unfortunately it occasionally happens that the pointing of the abscess is a matter of long duration; the pus burrows in the cellular tissue, and long sinuous channels form, through which it finds its way to the surface, and these fistulous tracts render the case extremely protracted.

Perhaps the exudation hardens, and a large solid tumour occupies some portion of the pelvis, producing both rectal and bladder distress by pressure on these viscera, and exhausting the patient through a slow process of absorption, prolonged over many months of unrest and suffering. If an abscess forms, it may point in the rectum or vagina, or the abdominal wall. In the Cork South Infirmary, when I was attached to its surgical wards, a woman was admitted under my care with a parametric exudation boarding up the roof of the vagina anteriorly, and producing great vesical distress. Shortly after admission, a quantity of pus suddenly appeared in the urine, and this continued for a con-

siderable time, and the pelvic hardness finally disappeared. Within the past six months, I was called to see a lady, exhausted from prolonged suffering, from what I judged to be an attack of peri-uterine cellulitis with perimetritis. The patient was so weak that she fainted at the first attempt at a digital examination. She had not for many weeks had rest, save by the aid of bromide of potassium and chloral. I found a large tumour fixing completely the uterus. There was a slight uterine discharge. When the bowels were relieved, the greatest agony was suffered. There was limited peritonitis, with exudation, which could be traced almost to the level of the iliac crests. On the following day a speculum was introduced, as she complained of considerable pain during the night, and a flow of fœtid discharge. I found a quantity of discoloured pus in the vagina; and on clearing this away, I saw that it came rather profusely from the os uteri. For five weeks this purulent discharge continued, and it lasted, in smaller quantity, for ten weeks from the time I first saw her. She has now recovered: all hardness has disappeared, and the uterus is quite movable. But this happy termination of such an extremely grave case is not the rule.

In addition to the immediate dangers, from the inflammation involving the peritoneum and causing general peritonitis, or the more remote risks that are inseparable from the presence of pus and the bursting of a pelvic abscess, there are the ultimate results, such as adhesions, atrophy of the ovary, occlusion of the Fallopian tube, sterility, uterine displacements, with amenorrhœa and dysmenorrhœa. Parametritis is not an affection in which we have so much to fear fatal consequences, as those chronic conditions I have already specified.

Treatment.—Much of what has been said regarding the treatment of perimetritis refers with equal force to para-

metritis. Rest in every way that it can be secured, and that for a considerable time; opium in the acute stages, and the regulation of the temperature by the application of ice, or Leiter's tube (Fig. 167), which can be applied both externally and in the vagina. In the case just detailed, the warm vaginal douche, with a little of Condy's solution in the water, used three or four times daily, did much service; warm compresses and thin cataplasms externally were also of great benefit. The liquor epispasticus may be applied over the hypogastrium. The patient's strength must be sustained with a light and nutritious diet. In the chronic stages the iodides of potassium or sodium, combined with bromides and tonics, may be given. I am inclined, in these cases of old and unabsorbed effusion, to look favourably on a course of bichloride of mercury and bark (or a pill containing bicyanide of mercury (gr. $\frac{1}{12}$), quinine (gr. ii.), extract of gentian and bread-crumb q.s.). One pill three times daily.

I must say a word of caution regarding the rectum. I could detail particulars of cases in which both serious consequences to the patient, and unfortunate errors of diagnosis, have resulted from overlooking the possible presence of scyballous masses in the large intestine and rectum. Dr. Gaillard Thomas draws particular attention to this important fact. I would warn all practitioners to explore the rectum and carefully palpate the colon in every case where a doubt exists as to the nature of an obscure abdominal tumour.

OÖPHORITIS (OVARITIS).

Etiology, Causation, and Pathology.—I have associated oöphoritis with parametritis and perimetritis, because it is most frequently met with, either as a complication or extension of these affections. It is doubtful, however, whether

inflammation of the pelvic peritoneum may not more frequently originate in the ovary (Aran) than we think. The ovary is more or less involved in any severe case of parametritis or perimetritis. So is it also uncertain if uterine inflammatory conditions may not, more frequently than we fancy, arise (Matthews Duncan) as secondary results of both acute and chronic ovarian hyperæmia and inflammation.

It is no doubt unusual to see a case of uncomplicated oöphoritis. Still, we do occasionally meet it, both as a result of chill taken at the menstrual period, and in the early stages of gonorrhœa. During my connection with the Cork Fever Hospital (eleven years), I frequently saw well-marked cases of oöphoritis in patients suffering from typhoid fever. It is impossible in such cases, or in the exanthemata, to say how far the ovaries may have been involved by previous inflammatory or degenerative changes. Again, in typhoid fever we can readily understand how the ovaries may become involved in the adjacent peritoneal and glandular mischief. Dr. Matthews Duncan attributes the occurrence of oöphoritis frequently to the abuse of alcohol. Reflex excitement of the ovarian nerves may originate it, much in the same manner as orchitis occurs in the male. Hence we have it following excessive sexual intercourse, masturbation, and the passage of the uterine sound. I have no doubt that such reflex nerve disturbance leads frequently to more grave results than we could possibly anticipate from so slight an exciting cause as the use of the sound. I believe the analogous febrile condition, which Sir Andrew Clark has lately drawn attention to, as arising from the passage of the catheter in the male, may be accounted for in precisely the same manner.

Oöphoritis is acute or chronic. The acute form is subdivided into follicular and interstitial. The former is an inflammation, leading frequently to suppuration of the

Graäfian follicles. In the latter, the connective-tissue is attacked. The inflamed and swollen ovary may suppurate. But an active hyperæmia of the ovary may persist for a length of time, without further consequences than hypertrophy of the connective-tissue and interstitial thickening, with effusion. This hyperæmia leads to areolar thickening, pressure on, and obliteration of, the follicles, further cicatrization of the connective-tissue, and, ultimately, a cirrhotic state of the organ. In thickening of the peripheral layers of the stroma we have a satisfactory explanation of the accompanying sterility, for the ripened ovum cannot escape. Abscess and cystic degeneration are the occasional results of either acute inflammation or prolonged congestion. Cysts may result from the extravasation of blood and the degeneration and absorption of the coagulum.

Diagnosis.—The enlarged and painful ovary may be felt, (*a*) by palpation, through the abdominal wall; (*b*) by the vagina, by a careful digital examination; (*c*) by rectal exploration, and especially by the conjoined recto-vaginal examination. It may vary in size, feeling about the size of a large almond, or even of a pigeon's egg. Pressure on the ovary excites pain. But it must be remembered, that pain in a woman who is hysterical and nervous can be made the excuse for any or every form of unjustifiable charlatanism. Therefore we must largely discount the exaggerated sensitiveness complained of when making our diagnosis, and not attach too great importance to it.

Symptoms and Physical Signs.—These will depend on the severity of the attack, any collateral disease, or the acute or chronic nature of the affection. Ovarian congestion may be accompanied by any form of pelvic or uterine inflammation. As we have seen, oöphoritis, acute and chronic, may be attended by any or all of the following symptoms: oöphoria; dysootocia (Robert Barnes); dysmenorrhœa;

dyspareunia; hysteria and hystero-epilepsy; various remote (reflex) pains; neuralgia; inability to walk; pain in defæcation; sterility.

Treatment.—Complete rest when there is any acute inflammation; the knee-elbow position assumed for some time daily (Goodell) [the bed or couch on which the patient lies may have the foot raised about four inches by blocks of wood or long castors (Heywood Smith)]; avoidance of sexual intercourse; leeches to the inguinal region or the anus; vesication over the inguinal region; iodine paint over the same part [a combination of chloroform (℥i.), extract

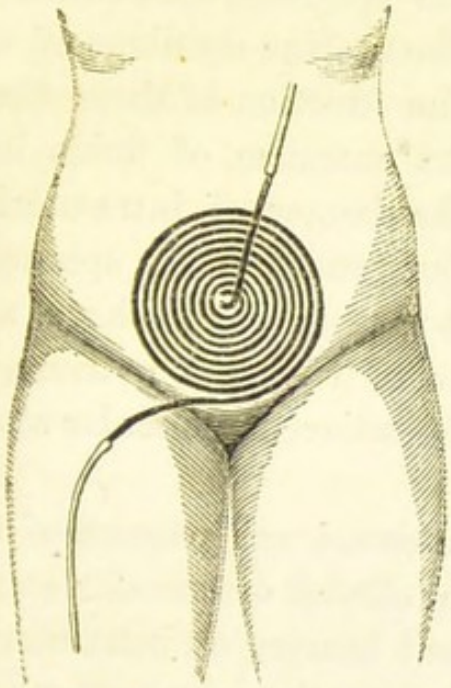


Fig. 167.—Leiter's Tube applied.

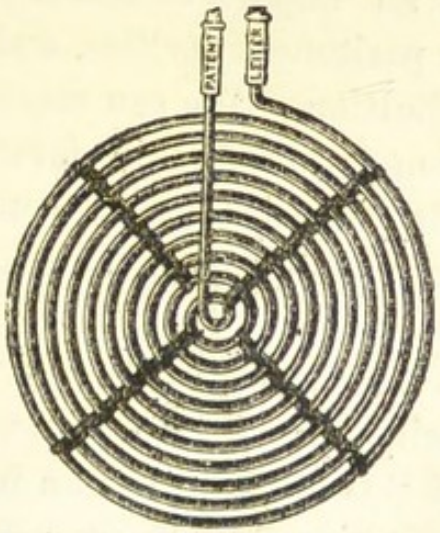


Fig. 168.—Leiter's Temperature Regulator.

of belladonna (℥ss.), mastich (℥ii.), camphor (℥ii.), and rectified spirit (℥i.) used as a pigment over the ovary]; Leiter's tube can be applied during inflammatory states. The bromides may be given internally, and, in the chronic stage, iodide of potassium. If dysmenorrhœa, hysteria, hystero-epilepsy, neuralgia, persist, and render the woman's life miserable, the operation of spaying (Battey) is to be con-

sidered, and, after due consultation, may have to be performed.

Salpingitis.

Etiology, Causation, and Results.—For the same reason as that given in discussing oöphoritis, I include here a brief allusion to salpingitis, or inflammation of the Fallopian tube. It accompanies uterine inflammation, acute and chronic, pelvic, peritoneal and cellular inflammation. Hence it is commonly the result of those exciting causes which predispose to these affections. I shall refer to a few matters of practical moment with regard to the Fallopian tubes.

The student must recollect the sphincter-like action of the muscular fibres surrounding the uterine openings of the tube. Arrest or destruction of the function of these fibres has an important bearing on the entrance of fluids into the peritoneal cavities, and on the danger of intra-uterine medication. We can readily understand how the sphincter action is arrested in severe post-partum hæmorrhage, and destroyed in diseased conditions of the endometrium, or from the growth of tumours in the adjacent muscular structure.

I have already referred to the occasional passage of the uterine sound into the tube in *dilated* or *saccular* states, and this fact also has an important bearing on intra-uterine medication, and the occasional bad results which attend on it. The opposite condition, or the one of *stricture* of the tube, is a well-understood cause of sterility. So it may produce distension of the tube and accumulation of fluids—*pus*, mucus, or *blood* in the tube. This distension may lead to retro-flow of the fluid, or *rupture* of the tube. *Adhesion*, *displacements*, *cystic* enlargements, are also some of the remote results of inflammation, either primary or secondary, of the tubes. Such an unusual accumulation of fluid, even to the size of a child's head, is termed tubal dropsy. I do

not allude to extra-uterine fœtation. This accident of pregnancy is fully discussed in all obstetric works. The possibility, however, of a pelvic hæmatocele arising at any time during the growth of the ovum, from this cause, must not be lost sight of. So may this complication follow from a congested state of the mucous membrane, and any rupture of the tubal vessels.

Diagnosis.—By a careful digital examination, we may detect effusions, thickenings, enlargement, adhesions, or tumours. But such diagnosis requires considerable experience in gynecological examination.

CHAPTER XIX.

PELVIC HÆMATOCELE.

PELVIC HÆMATOCELE is the name given (McClintock) to a collection of blood, which is either *enclosed* in the peritoneum behind the uterus, in Douglas's pouch—*retro-hæmatocele*

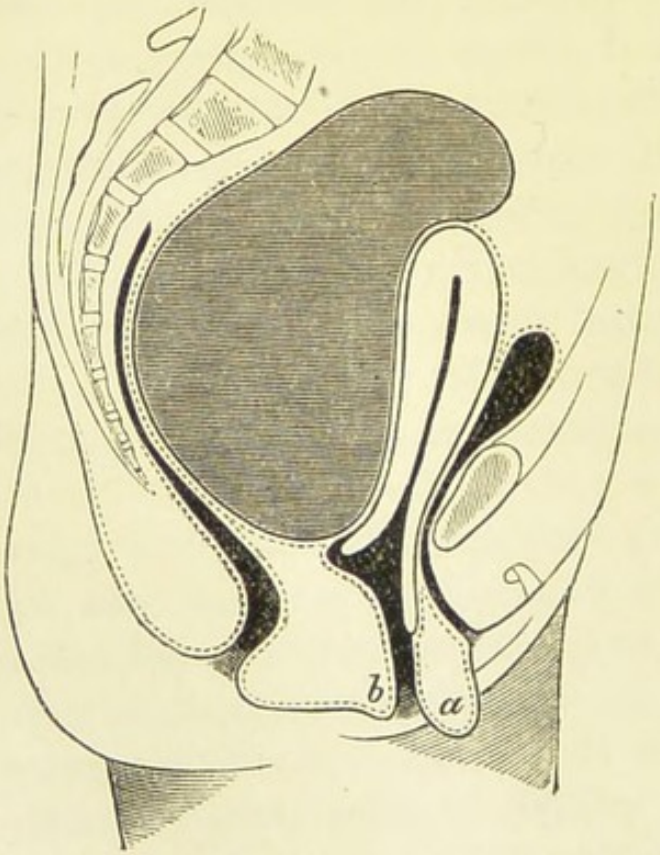


FIG. 169.—Retro-hæmatocele (Schroeder).

(Nélaton); or in front of the uterus (comparatively rare); between it and the bladder—*ante-hæmatocele*. The blood may escape posteriorly or anteriorly into the cellular tissue outside the uterus, forming a thrombus or hæmatoma. If it escapes into the peritoneum, it is called *intra-*

peritoneal; if the blood is effused into the cellular tissue outside it, it is by some authorities named *sub-peritoneal hæmatocele.* It is also described as 'encysted,' when limited by adhesion, either in the peritoneum or outside it.

Causation.—Hæmatocele is more likely to occur during the active period of menstrual life; but I have known a case in which a large retro-hæmatocele occurred rapidly, in a patient over sixty, from a fall off a chair. I have on one occasion seen a pelvic hæmatocele form rapidly in a severe case of typhus fever. We may thus subdivide the causes of pelvic hæmatocele:

1. Abnormal blood-states	Anæmia. Plethora. Purpura. Zymotic diseases. Jaundice.
2. Obstruction to flow of blood, menstrual or other (as in atresia), in the	Fallopian tubes. Uterus. Vagina. Vulva.
3. Menstrual suppression from ...	Mental shock. Cold. Coitus.
4. Connected with pregnancy	Extra-uterine fœtation. Abortion. Rupture of uterus (in early pregnancy).
5. Disease in the ovaries and Fallopian tubes	Rupture of ovary and Fallopian tubes.
6. Traumatic ...	After operations, as ovariotomy; flow from the pedicle (Wells). Blows, kicks, falls, some overstrain, the use of tents.
7. Perimetritis and parametritis.	(Virchow and Schroeder.)

Symptoms and Physical Signs.—There may or may not

have been some previous hæmorrhage, or a suspicion of it. The symptoms in the relative order, and as they usually occur, are—shock, tendency to collapse, great pelvic pain, syncope, sense of weight and pressure in the pelvis, vomiting, fall in temperature, rapid and weak pulse. These symptoms may persist, and death may ensue, despite every effort to rouse the patient. They are all intensified in the intra-peritoneal variety. Their severity will in great measure depend on the quantity of blood which is effused into the peritoneal cavity. When reaction sets in (within forty-eight hours), the patient may suffer from rigors, the temperature rises, the skin becomes hot, the pulse changes in character. Menorrhagia may increase or persist. On examination, the abdomen is frequently found tense; there are abdominal swelling and dulness, especially over the hypogastric and inguinal regions. The abdomen is tender on palpation. On vaginal examination, a mass is found generally posterior to the uterus—rarely anterior; it is smooth, soft at first, and having a semi-fluctuating feel. The uterus is pushed forwards against the bladder in the retro-uterine variety; backwards against the rectum in ante-hæmatocele. The bladder is generally encroached on, and retention of urine may result, or dysuria. The rectum is pressed upon. There is either difficulty and pain in defæcation, or rectal irritation may be present with tenesmus and dysenteric symptoms. As the case proceeds, the uterus becomes more fixed, and the mass harder. The further symptoms and local signs depend on the course the hæmatocele takes, whether absorption occurs, or hardening of the mass, or if suppuration follows the pus finds an exit through the rectum or vagina. It may escape, though very rarely, into the peritoneal cavity; on the other hand, it may very slowly disappear.

I had one case of well-marked pelvic hæmatocele under

my observation for nearly three years. I was telegraphed for, from a distance, to see the lady, a young married woman, with conoidal cervix, shortly after the acute symptoms set in. She was then in acute pain; the bladder was pressed against by the uterus, which was pushed upwards and forwards, so that it was almost impossible to reach the cervix; there was retention of urine, and with the greatest difficulty the rectum was occasionally emptied by enema. She was dangerously ill from the protracted pain and distress, caused by the pressure on the pelvic nerves and viscera. The swelling gradually disappeared, and when I last saw her the bowel and bladder acted in quite a healthy manner, and the uterus had fairly regained its mobility, though not entirely. I cite this case merely to show how protracted such a recovery may be. Should suppuration take place, we have to dread the danger of peritonitis, septic absorption, and septicæmia.

Diagnosis.—This is not in some old-standing cases at all so simple a matter as at first sight it may seem. We have to differentiate pelvic hæmatocele more especially from a retroverted uterus; a parametric effusion; a uterine fibroid; and a cystic formation in the pouch of Douglas, or outside it.

We must rely in diagnosis on these proofs:

1. The suddenness in the accession of the symptoms.
2. The occurrence of hæmorrhage.
3. The position of the tumour posteriorly to (as a rule), and not at the sides of, the uterus.
4. The mode of formation of the tumour; its painful nature; its rapid development; its softness in the first instance, and the subsequent hardness, accompanied by shrinking of the tumour.
5. The position of the uterus, determined bimanually; the direction of the uterine sound; the length to

which it passes; the independent mobility of the uterus; the appearance of pus, and the associated reduction in the size of the tumour.

Prognosis.—This must always be grave—much more so in the intra-peritoneal than the sub-peritoneal effusion. There are the dangers of exhaustion from repeated hæmorrhage, the pain of pressure, septicæmia, and peritonitis.

Treatment.—Absolute rest; ice over the hypogastrium; ergot given internally, and better by means of the subcutaneous injection of ergotine (gr. iii. to gr. v.) into the glutæal region; opium later on during the period of reaction, both by the mouth, and by the rectum, enema and suppository; quinine with digitalis; stimulants, to prevent syncope—iced champagne and brandy are the best. I have already

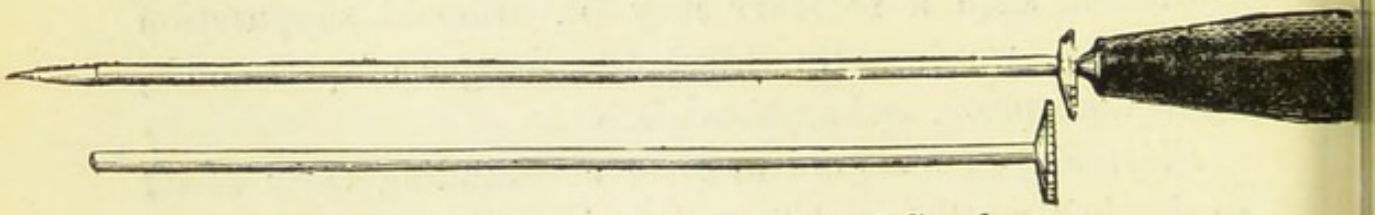


Fig. 170.—Exploring Trocar and Canula.

entered into the question of evacuation of the fluid, and, in order to avoid repetition, must refer the reader to the chapter in which this question is discussed.* The figure shows a slender exploring trocar and canula, which will be found of use in those cases. Individually my experience of pelvic hæmatocele would lead me to say with Dr. Robert Barnes: Do not interfere surgically with any hæmatocele unless there is convincing evidence of the presence of pus, or that septicæmic symptoms threaten. The aspirating-needle is the safest explorer, as it is also the safest means of evacuating the pus. Should this not answer, and the pus reaccumulate, the guarded bistoury must be used, and the cavity subsequently washed out with some weak Condy's fluid, or other disinfectant.

* 'Vaginal Paracentesis' and 'Puncturing a Pelvic Hæmatocele,' pp. 85-87.

CHAPTER XX.

FIBROID TUMOURS.

Etiology.—Little is known of the *causes* of uterine fibroids. They occur in women otherwise perfectly healthy. They often appear when no predisposing or exciting cause to account for their appearance can be traced. The period of life has much to say to their occurrence. We might anticipate this relationship if we remember the influence of ovulation and pregnancy on the uterine tissue. So uterine fibroids are found most frequently from the ages of thirty to fifty, and in married women. Still, they are frequently met with in the unmarried, and in women under thirty. There is the relationship also of cause and effect between uterine fibroids and sterility. They are both constantly associated with an old history of dysmenorrhœa. It will be found that in these sterile cases the cervix is frequently malformed and conoidal in shape. It is curious that the African races, in which malignant disease is not a common affection, should be so liable to fibroid tumours.

Pathology.—Fibroid growths of the uterus have their origin in the muscular and connective-tissues in the wall of the uterus, and more especially those of the body. The term 'fibrous' is not strictly accurate. The name 'fibromyoma' expresses better the constitution of the tumour most frequently found. Some tumours present more of the character of the muscular, others of the connective-tissue elements. The tumour is proportionally hard, according to its age and the development or preponderance of the fibrous

tissue. A uterine fibroid may pass into different forms of degeneration: (*a*) fatty; (*b*) colloid or myxomatous; (*c*) calcareous; (*d*) suppurative and gangrenous. The most important change from a practical point of view, as it is very frequently met with and influences the diagnosis of fibroid disease, is the formation of cysts in the tumour. Cysts may form from (1) colloid or myxomatous degeneration of the connective-tissue; (2) hæmorrhagic effusion into the substance of the tumour; (3) œdema and effusion of serum, with separation of the fibres, and softening or liquefaction of the tissue, and the resulting formation of a cyst-like cavity; (4) fatty degeneration of the tumour. The transformation of a fibroid tumour into a carcinoma is extremely rare; the transition into a sarcoma of a malignant nature is not so very uncommon.

Varieties.—We may classify fibroid and sarcomatous tumours of the uterus—(1) according to their pathological character; (2) their situations:

(1) Fibroma.
Fibro-myoma.
Myo-sarcoma.
Fibro-myxoma.
Sarcoma.
Cystic sarcoma.
Myxo-sarcoma.
Cystic fibro-myoma.

(2) Fibrous tumour of the cervix.
Fibrous tumour of the body.
(*a*) Sub-peritoneal; sub-serous.
(*b*) Sub-mucous.
(*c*) Intra-mural; parenchymatous.

They are attached to the wall of the uterus either by a pedicle or by a broad base. The *sub-peritoneal* tumour pushes the peritoneum before it. It may become detached

from the uterus, or remain attached to it by a long pedicle composed of peritoneum and connective-tissue. The *submucous* grows into the uterine cavity. If it is pedunculated, it is known as *fibrous polypus*. If it is parenchymatous, it may be *single* or *conglomerate*, encapsuled or non-encapsuled. The conglomerate may be formed by the fusion of a number of small fibroid masses, which give to the tumour a lobulated appearance. They may lie in a capsule of cellular-tissue, or they may be simple outgrowths from the uterine wall, and continuous with and devoid of any capsular investment.

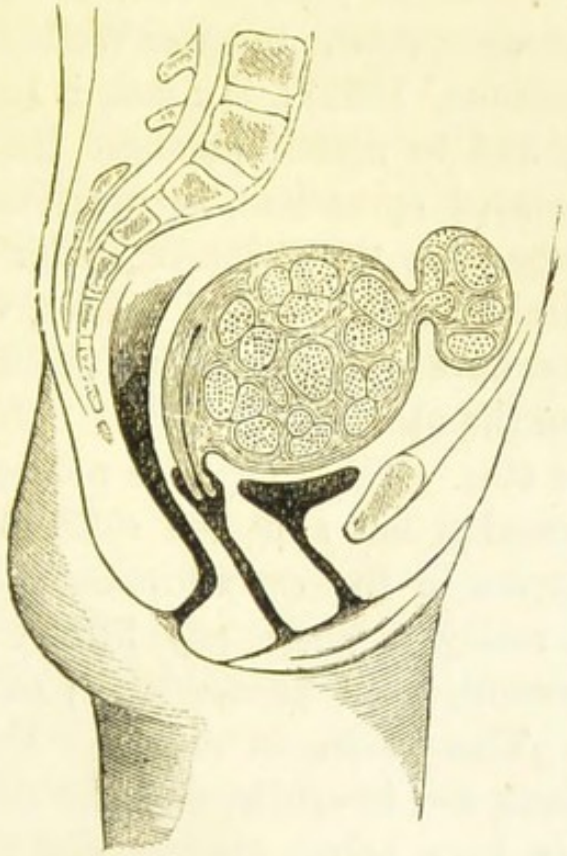


FIG. 171.—Interstitial and Subperitoneal fibroid adapted from Schroeder.

Diagnosis.—We distinguish a fibroid tumour of the body of the uterus by—

The history of the case.

Careful examination of the abdomen (see 'Examination of a Case').

Digital and bimanual examination.

The uterine sound.

The diagnosis of fibroid tumours of the uterus is not always so easy a matter as it may appear. Twenty-three years ago I saw an excellent surgeon, after the preliminary incision for ovariotomy, fail in endeavouring to push a trocar into a solid fibroid of the uterus. Several experienced physicians and surgeons concurred in the diagnosis. By that lesson (the woman died the same day) I was taught the care with which in ambiguous cases we must arrive at a conclusion, or pronounce an opinion in many cases of abdominal tumours. While exercising all the care and caution that he possibly can, the surgeon might fall into error in some cases. Spencer Wells says ('Ovarian and Uterine Tumours,' 1882): 'In fact, it has happened to many surgeons, and to myself amongst the number, that we have commenced operations, as ovariotomy, and even removed tumours from the abdomen, under the impression that we were dealing with diseased ovaries, when, upon examination, they have proved to be pedunculate fibroid outgrowths from the uterus.'

History of the Case.—These negative points are of importance: the tumour has not appeared suddenly; there have been no symptoms in the early history of the case of a febrile state; rarely is there any history of an injury. There has commonly been hæmorrhage; menorrhagia and metrorrhagia. This varies in degree. Occasionally the menstrual periods are irregular, and the discharge scanty. There may have been pelvic distress, and some trouble of the bladder and rectum. These pelvic symptoms depend in great measure on the position of the tumour, its size, and the rapidity of its growth. This is generally slower than in ovarian cystoma. There is not the same rapid emaciation of the countenance which we see so commonly in ovarian disease. Many women who have comparatively large uterine fibroids do not exhibit any marked change in

the expression of the face, nor is the fibroid affection accompanied by the same pallor of the countenance that marks the growth of the ovarian cyst. The presence or absence of pain will in great measure depend on the position of the tumour, and the direction in which it grows. Periodical attacks of peritonitis, or interference with the functions of the bladder or rectum, or inflammatory changes in the tumour itself, will give rise to pain. Yet one often sees large uterine fibroids, the growth of which has not been attended by pain.

Differential Signs of Fibroid Tumour.

Enlargement of the lower portion of abdomen.

Enlargement of the superficial abdominal veins.

Sensation imparted on palpation—of rather a solid, symmetrical, and fixed tumour.

Tumour usually central, and the increase in abdominal measurement is most marked from the pubes to the umbilicus.

The uterine enlargement, even early in the disease, may be defined by palpation and percussion over the pubes. This is best effected by pressing the ulnar border of the hand deeply a little above the pubes, thus making tense the abdominal wall, and pushing upwards the viscera. Vascular murmurs are frequently heard synchronous with the pulse.

By digital and bimanual examination, the uterus is found enlarged, either in its anterior or posterior wall. The extreme hardness may be at once apparent to the finger, or we may find two or three nodular enlargements; or the entire uterus may feel like a hard, immovable mass, fixed in the pelvis.

The os uteri is generally healthy, at times depressed; but

more frequently, in advanced fibroid tumour, it has receded, and may not be reached by the examining finger,

There is occasionally characteristic hardness of the cervix, which may be felt, like the nipple of the breast, moving over a stony hard surface. This mobility of the conical cervix, independent of the enlarged body, is very characteristic of many cases of fibroid tumour.

The rectal and recto-vaginal examinations discover the enlarged, fixed and hardened uterus.

Negative Signs.

There is not (generally) any fulness or prominence of the umbilicus.

There is rarely (save in fibro-cystic disease) any fluctuation. If present, it is very different from the superficial wave seen in ovarian disease.

When there is a hard pelvic tumour, and at the same time evidence of the presence of fluid, we may suspect the fluid to be ascitic.

There are no uterine contractions.

The characteristic signs of pregnancy are absent.

The Uterine Sound.—We thus see that in a considerable proportion of cases we may feel satisfied of the nature of the tumour without the use of the uterine sound. But this mode of examination is absolutely necessary to confirm the diagnosis in the greater number of fibroid tumours. By it we learn (utero-abdominal, utero-vaginal, and utero-rectal methods)—

(*a*) That the uterus is enlarged ;

(*b*) That the tumour felt through the abdominal wall is an enlarged uterus ;

(*c*) That the tumour is fixed or movable ;

(*d*) To differentiate fibroid tumours from other pelvic enlargements or flexions of the uterus.

The uterine sound is passed into the uterus. The finger in the anterior or posterior fornix does not perceive the sound, and it is obvious that there is an intervening body between the finger and the sound. By the utero-abdominal and utero-rectal methods we verify the test. We thus distinguish an intra-mural fibroid from anteflexion or retroflexion.

Dilatation by Tents and Exploration.—In some cases, when still in doubt, we may have to dilate the uterus and explore the cavity with the finger. This might be required in such a case as that described by Schroeder, where the history pointed to a blighted ovum. On dilatation the tumour was discovered to be a hard fibroid. The same step may be required in chronic hyperplasia.

Symptoms.—Uterine fibroid frequently exists, and yet there are no symptoms to attract attention during life. The presence of the tumour is only discovered in a post-mortem examination. The most important symptom is that of menorrhagia. This comes on gradually, at first as an increase of the menstrual period; after a time, this may amount to a flooding, or there may be irregular hæmorrhages. The loss of blood may threaten the life of the patient. Death has occurred from rupture of a uterine sinus. Large vessels do not generally enter a uterine fibroid, or at least only such as have no capsule, and which have an intimate connection with the uterine tissue. The blood is poured out by the congested mucous membrane of the uterus, and not by that covering the fibroid. Cervical fibroids do not, as a rule, cause hæmorrhage.

Pain.—This assumes, in many instances, the form of dysmenorrhœa, especially in the case of the cervical fibroid. Pain occurs from the weight and distension, and the pressure of the tumour on the viscera and nerves of the pelvis. It is frequently of a 'bearing down' nature.

Pelvic Symptoms.—Pressure on the bladder, rectum, and ureters produces frequent and painful micturition, constipation, and pain in defæcation, hydro-nephrosis, Bright's disease, with uræmic symptoms.

Sterility.—This is a common consequence of uterine fibroid. Fibrous tumours may induce abortion and seriously complicate labour, and cause post-mortem hæmorrhage.

Results.

1. The tumour may attain a certain size and then remain quiescent, interfering but little with the health or comfort of the individual.

2. It may disappear spontaneously.

3. Spontaneous enucleation. The tumour is protruded through the lacerated or sloughing mucous membrane. It is thus uncovered, and is forced onwards into the vagina by the uterine contraction.

4. The tumour becomes pedunculated, and is extruded into the vagina in the form of a polypus; or it may, if subperitoneal, become adherent, and remain either attached to some organ or lie loose in the peritoneal cavity.

5. Suppuration and gangrene. This may lead to perforation of the other viscera, peritonitis, and septicæmia. It may thus be disintegrated and discharged in fragments.

6. Inversion of the uterus. It is well to recollect that fibroid tumours, those having a broad base and connected with the parenchyma of the fundus, may cause, in their growth and extrusion, partial inversion of the uterus.

Fibro-cystic Tumours.

I hardly know any affection in the diagnosis of which the practitioner is more likely to fall into error, than in that of fibro-cyst of the uterus. I can recall to mind a few cases myself, in which, notwithstanding repeated and most

exhaustive examinations, I have been mistaken. Still, this liability to err, with our improved knowledge, is becoming less each day. If the practitioner is resolved to take nothing for granted in the examination of a patient, and pass step by step by a process of exclusion to his final judgment, he will not be likely to make any mistake. Let us suppose that he has, say, to distinguish in a given case between ovarian tumour, pregnancy, and a fibro-cyst of the uterus. He must, when he comes to decide the question of fibro-cyst, side by side with the other two conditions, place especial value on these points :

1. The length of time the tumour has taken to grow, and its mode of growth.
2. In palpation, the irregularity or dense feel of the tumour in parts.
3. The obscure character of the fluctuation as compared with ovarian dropsy.
4. The exclusion of the signs and symptoms of pregnancy.
5. The depth to which the uterine sound passes.
6. The mobility of the tumour with the uterus, both with the uterine sound and bimanually.
7. A careful examination by the rectum of the tumour under an anæsthetic, in the bimanual method.
8. Aspiration and examination of the fluid.
   (*a*) Its property of coagulating, spontaneously and by heat.
   (*b*) The presence of Atlee's fibre-cell.
9. It may be necessary to make an exploratory incision : the colour of the uterine wall (dark red) is characteristic and quite distinct from the appearance of the cyst wall of the ovarian cystoma.

See diagnosis of ovarian tumours.

Treatment, Palliative and Operative.

Its palliative treatment consists in the use of means calculated—

1. To reduce hyperæmia and congestion.
2. To control and prevent hæmorrhage.
3. To promote absorption of the tumour.
4. To subdue pain and relieve rectal and vesical distress, and reduce hyperæmia and congestion.

Internally, for this object, we give such medicines as ergot (liquid extract); digitalis; iodide of potassium; bromides of sodium and potassium. Locally, we may apply the hot vaginal douche; scarify the cervix; use astringent tampons of tannic acid and glycerine; support the uterus with a Hodge's pessary; advise proper bathing (baths of iodine and bromine may be tried), and the use of such spas or waters as Kissingen, Kreuznach, Woodhall Spa.

Sexual intercourse must be moderated, and especially it should be avoided about the menstrual periods.

To control Hæmorrhage.—The subcutaneous injection of ergotine, as recommended by Hildebrandt, is very efficacious in controlling hæmorrhage. I have injected as much as 15 grains of Bougean's ergotine, mixed with water and glycerine, into the gluteal region; but the average dose is 3 to 5 grains. The needle must be passed deeply into the muscle, otherwise we are apt to cause an abscess. Sclerotic acid may also be used subcutaneously (gr. $\frac{1}{2}$ to gr. i.). The solution of ergotine should be made fresh. Astringents may be given internally.

Dilatation of the Cervical Canal with sponge or laminaria tents will be found a valuable means of treating hæmorrhage.

Incision of the Cervix, in the case of a cervical fibroid, and where there is dysmenorrhœa, is to be preferred.

To promote Absorption of the Tumour.—Ergot or ergotine in the manner recommended, especially if the tumour be submucous or interstitial, and not very hard, may be tried.

Bichloride of mercury; iodide of potassium; iodine baths. Electrolysis is advised by Cutter. The current is passed through the tumour by two strong steel electrodes, inserted at either side of the abdomen. Dr. Cutter has reported an arrest in the growth in thirty-two out of fifty cases treated in this manner.

To relieve Pain and Rectal or Vesical Distress.—This must be subdued by bromides and sedatives. The tumour, if large and pressing on the pelvic viscera, should be pushed up out of the true pelvis. If the tumour be sub-peritoneal, great relief may follow this step. Special attention must be paid to the bladder and rectum. Any accumulation in the latter should be prevented. The occasional use of an enema will be indicated.

Special Operative or Surgical Treatment of Fibroid Tumours.

To favour enucleation—

Incision of cervix over the tumour	Dilatation and incision of the cervix over the tumour favour expulsion of the tumour and check hæmorrhage. The cervix may be incised with a Sims's knife.
Incision of the mucous membrane covering the tumour (knife or cautery)	Sims's knife or a guarded bistoury or Paquelin's cautery-knife may be used. The cervix is first dilated. The incisions are made about an inch long and over quarter of an inch deep through the mucous membrane. It might be necessary, should sloughing occur, to at once enucleate the tumour.

Enucleation by { Thomas's spoon-saw; Marion Sims's enucleator, scissors, and fingers; Professor A. Simpson's nail curette.

Ecrasement by { Chassaignac's chain écraseur, or Braxton Hicks's wire écraseur. { To remove a large uterine fibroid from the vagina, the author's polyptome will be found convenient, or the instrument of Aveling.

Avulsion by { Volsellum forceps—'a relic of barbarous surgery' (West).

Laparotomy—removal by abdominal section:

Operations of—

Pean ... { *Extra-peritoneal:* reduction of tumour by 'morcellement, and application of Cintrat's serre-nœud to pedicle.

Schroeder... { *Intra-peritoneal*, and silk ligature.

Thomas ... { *Extra-peritoneal*, and clamp and cautery.

Hegar ... { By elastic ligature; (1) constriction of the uterine stump; (2) stitching of peritoneum to stump; (3) cautery and chloride of zinc applied to stump.

I must refer readers to the works of Emmet, Thomas,

Sir Spencer Wells, Hart and Barbour, Barnes, Schroeder, for a detailed description of these operations.

*Battey's Operation.**—The operation of 'oöphorectomy,'† or spaying, has now been performed many times for growing and bleeding fibroid tumours. Also it has been performed with success in similar cases where dysmenorrhœa has been the prominent symptom. The operation has been most successful in the hands of such distinguished operators as Thornton, Savage, Wells, Martin, Hegar, Goodell, Dr. Battey himself, and many others.

It consists in removal of both ovaries—by the vaginal or abdominal methods.

At the International Medical Congress, 1881, Dr. Battey stated the mortality after 218 operations to be, for all diseases operated on, 18 per cent. He gave the following summary of results from the reports of various operations:

Summary of Results.

	Number.	Per cent.
Died	40	... 18
Recovered	178	... 82
	218	

* It is clearly proved (Battey, Wells, Peaslee, and others) that double ovariotomy does not unsex a woman. Dr. Battey, at the Congress of 1881, said: 'Perhaps no safer rule can be laid down to-day, by which one may determine in any given case the propriety of the operation, than by asking himself three questions, namely—1. Is this a grave case? 2. Is it incurable by any of the resources of the art short of the change of life? 3. Is it curable by the change of life? If all three of these questions can be answered affirmatively, the case is a proper one; but if not, the operation is not to be justified.

† Other indications for Battey's operation are chronic pelvic inflammation; hystero-epilepsy; ovaralgia, with mental disturbance; menstromania; ovaralgia, with menorrhagia; ovarian dysmenorrhœa; hydrosalpinx, pyo-salpinx.

Of the ultimate results reported :

Complete operations (removal of both ovaries) :

	Number.	Per cent.
Cured	88	... 72
Benefited	22	... 19
Not benefited	11	... 9
	121	

Incomplete operations (removal of one ovary alone, or of both ovaries imperfectly removed) :

Cured	6	... 26
Benefited	10	... 44
Not benefited	5	... 22
Not stated	2	... 8
	23	

Tait's Operation. — This operation must be kept quite distinct from that of oöphorectomy. Mr. Tait based his reasons for complete removal of the uterine appendages on his view that the Fallopian tubes were diseased, as well as the ovaries (pyo-salpinx and hydro-salpinx), in the great majority of cases requiring oöphorectomy. I have recently had the subjoined summary of his cases from Mr. Lawson Tait. It only includes the cases of abdominal section for the diseases tabulated, and does not include all his operations. He has thus operated fifty-five times for removal of the Fallopian tubes and ovaries in myoma. He has had four deaths. Comment is unnecessary on this splendid achievement in abdominal surgery of Mr. Tait.

Analysis of 439 *consecutive Cases of Abdominal Section, by Lawson Tait.*

	Cases.	Died.
Exploratory incisions	45	0
Removal of one ovary for cystoma... ...	123	6
,, both ovaries for cystoma ...	56	1
,, parovarian cysts	30	0
,, uterine appendages for myoma ...	55	4
,, ,, ,, ,, hydro-salpinx	34	1
,, ,, ,, ,, pyo-salpinx	40	1
,, ,, ,, ,, chronic ovaritis ...	30	4
Extra-uterine fœtation	11	2
Battey's operation for menstrual epilepsy (that is, removal of appendages to bring on menopause)	5	0
Operations for cysts of abdominal viscera, including hydatids of brain, abscess, and cysts of kidney	20	0
	439	19

Total mortality, 4·35 per cent.

Though the number of surgeons who will be called on to perform, or feel justified in attempting, any of these serious operations must always be comparatively small, it must ever be of importance to the practitioner to recognise those symptoms, on the presence or recurrence of which he will feel justified in recommending or acquiescing in so serious a step as enucleation or laparotomy.

The intelligent practitioner will refuse to be guided by the mere *ipse dixit* of any surgeon or specialist, no matter how distinguished, when a patient places the responsibility of life and death in his hands. Nothing is more deplorable in these days of attenuated specialities than the growing

tendency on the part of the intelligent practitioner to relinquish his independent judgment before the assumed omniscient skill of some specialist. By all means let him give to that skill and enlarged experience all the weight they deserve, but let him not blindly and without sufficient reason hand his patient's life over and absolve himself of a responsibility that he cannot place on another's shoulders. If this spirit were more often manifested than it is at present, we should have less of that growing disposition on the part of the public to widen still further the gulf between the consultant and the general practitioners.

Indications for enucleation and laparotomy, when there is no choice save between a fatal issue and operation:

Large size of tumour;
Severe hæmorrhage;
Great suffering;
Suppuration.

There can be little doubt that with the improved methods of operating and the employment of Listerism, removal of fibroid tumours will be much more frequently practised in the future than in the past.

We can judge fairly of the mortality attending removal by every method, from the following statistics:

Wells ...	...	39	operations,	20	deaths.
Schroeder	...	66	„	20	„
Thomas ...	...	7	„	3	„
Peau ...	...	46	„	16	„
Bilroth ...	...	25	„	15	„
Keith ...	...	25	„	2	„
	Total	208		76	

When we reflect on the more than brilliant results of the renowned Edinburgh surgeon and ovariotomist, two deaths

in twenty-five cases, we may well ponder over the closing words of his communication in the *British Medical Journal*, December 8th, 1883: 'After all, the great difficulty is not in doing these things, but in knowing what are the cases in which we are justified in advising those who trust themselves to us to run the risk of a dangerous operation with all its attendant miseries. Could we get the mortality down to 5 per cent. in the bad cases—and these only are the fit subjects—we might then advise interference with a more easy mind. I am not sure if we can so advise, if the mortality cannot be kept below 10 per cent.' One fact all surgeons who attempt these operations must recollect. The mortality in most instances bears a direct ratio to the manipulative skill of the operator, and his experience of the operation.

CHAPTER XXI.

CANCER OF THE UTERUS.

Etiology.—Cancer of the uterus may occur in the body or cervix. It is either medullary, epithelioma, or scirrhus. The most distinguished pathologists have been divided in opinion as to whether cancer is primarily a local disease—one of the peculiar characteristics of which is, to rapidly invade the system through the blood and lymphatics—or if it is but the local manifestation of a constitutional or general blood-state. The weight of evidence, both clinical and pathological, appears to me on the side of those who hold the former view. Yet it is probable that there is much truth in both these views. It is certain that in many persons there is a constitutional vice present long before the malignant tendency manifests itself, and the hereditary nature of the disease in some few cases would seem to substantiate this view. There are peculiarities connected with the malignant tendency in some organs, as in the breast, the penis, the lip, the scrotum, which appear strongly to favour its local origin. On this interesting question, however, we cannot enter here.

Age.—The tendency to cancer of the uterus increases after thirty years of age; the largest proportion of cases occurring during the menopause, from forty to fifty. By far the largest proportion of cases are married women—excessive sexual intercourse acting, it is believed, as an exciting cause. Yet, as Schroeder remarks, 'prostitutes have no special ten-

dency to cancer of the uterus.' Nor does it seem that the popular belief in the hereditary character of the disease has much foundation in fact. These statistics, cited by Schroeder, are of interest:

Of 1237 women attacked with cancer, 753 were from 40 to 60 years of age;

Of 1000 Vienna women attacked, 771 were married or widows;

Of 948 women affected, in 78 only was it hereditary.

It would appear from the statistics of Simpson, Kiwisch, and others, that in one-third to two-thirds of all cases of cancer, the uterus is the organ affected.

Of the forms of cancer, encephaloid, epithelioma, and scirrhus, the last-named variety is very rare—I have but seen, out of the many cases of malignant disease of the uterus I have had under my care for twenty years, one well marked, and one uncertain, case of scirrhus of the womb.

Varieties.—Medullary Cancer.—Dependent upon the relative proportion of connective-tissue elements and the epithelial cells contained in its trabecular framework, we describe the cancer as hard or soft. In the medullary cancer there is a preponderance of the epithelial masses of cells, which form plugs in the uterine tissue, under the mucous membrane, invading the areolar elements. This invasion proceeds, both in an outward direction, and inwards towards the cavity of the uterus. The areolar structure is compressed by the great growth of cells, which ultimately soften, degenerate, and break down into cancer-juice. This process of cell-proliferation involves, after a time, the vaginal roof; and then begins that peculiar fixation of the uterus so characteristic of malignant disease. This infiltration may extend beyond the vaginal roof, attack the pelvic viscera, and reach the lymphatics. For a considerable time the ulceration may not reach the body of the

uterus, destroying only the cervix; but ultimately the body of the womb is invaded. This rapid cell-growth leads to death of the areolar tissue, softening, and ulceration.

Meantime the vessels supplying the cervical villi have increased in size; these latter have also become enlarged and hypertrophied. A papillomatous condition is the result. These papillæ, situated on a hardened and infiltrated base, are prone to bleed. Commencing as papillary hyper-

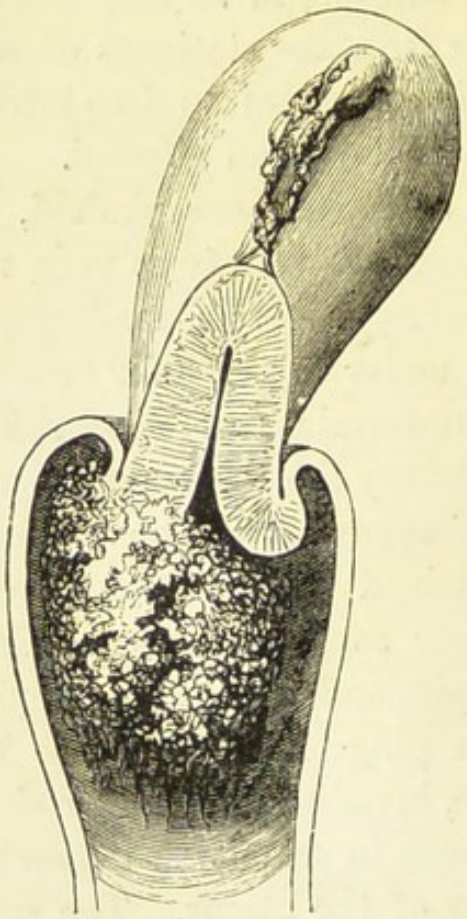


FIG. 172.—Cauliflower excrescence growing from Cervix Uteri (after Sir J. Simpson).

trophy, the malignant type is assumed sooner or later, by the commingling of the characteristic nests or 'comedons' of epithelial cells, which form plugs in the submucous tissue. Rapid cell-proliferation, great increase in the villi, enlargement of the vessels, and accompanying degeneration and liquefaction of the cells, result in a sprouting or vegetating papillary growth, known as *cauliflower excrescence*.

Carcinoma and Epithelioma.—Some authors (following Lebert) still distinguish carcinoma from epithelioma, or cancroid. The distinction is of some clinical importance. The pathological grounds of this classification cannot be thoroughly discussed in a work such as this. Dr. Galabin has made a careful examination of thirty-four cases of cancer of the cervix, and he has described the histological character of cancroid growths as most variable. He has found, as the exception, the epithelial globes, or bird's-nest bodies. The

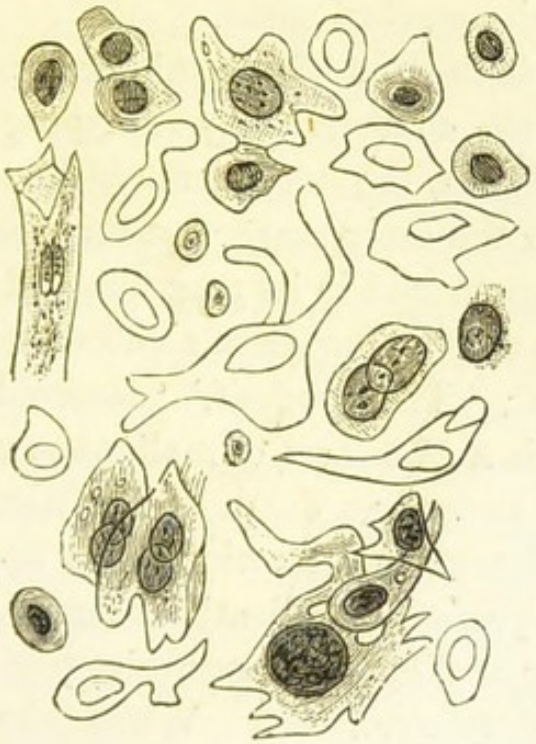


FIG. 173.—Scrapings from Cancer (Hart and Barbour).

characteristic cemented or 'cogwheel' appearance of the epithelium has been generally present in the epithelial masses—squamous in character, and bounded by 'a regular margin of columnar-like cells.' In older portions of the growths there was no cell-border to the masses. They were more or less detached from each other, in groups, and the intercellular substance was absent. Both the cells and nuclei varied considerably in the arrangement of the former and

the size of the latter. In a small number of cases there was evidence of cell-proliferation of the mucous glands. In a tenth of the entire cases examined the structure was that of sarcoma or lympho-sarcoma. According to Hart and Barbour we may group together the researches of Klebs, Waldeyer, Virchow, Ruge and Veit, and trace the origin of all these malignant growths, either to (*a*) the cervical epithelium of the cervical glands; (*b*) the deepest layers of squamous epithelium on the vaginal aspect of the cervix; (*c*) the connective-tissue cells of cervix; (*d*) the epithelium of the cervical canal.

The clinical distinction of cancroid and carcinoma is said to be found in the comparatively slow progress of the cancroid or epithelioma, the more superficial situation of the latter disease in the early stage, and its spreading character. Carcinoma is more rapid in its progress, and affects by metastasis the pelvic and lumbar glands and distant organs, as the lungs and liver. The 'rodent,' 'cancroid,' or 'corroding' ulcer of Clark is a rare form of malignant ulceration. In it there is rapid molecular death of the tissues, without any induration. Extensive ulceration is the main feature, often continuing for years before death occurs. The 'cauliflower excrescence,' or malignant vegetating papilloma, has been already briefly referred to. While the differentiation, clinically, of the different forms of epithelial cancer becomes almost impossible when the disease has lasted for any time, and ulceration has extended widely and deeply—the distinctive characters of *scirrhus*, in its slow progress, the hard and nodular nature of the growth, and the small discharge that attends its earlier stages, are quite apparent.

Causation.—I have yet to see the case in which pre-existing cervicitis, whether catarrhal or granular, has led up to malignant disease of the uterus. The presence of lacerations of the cervix in some cases may be fairly looked

on as a mere coincidence of the multiparous uterus; the strongest predisposing cause unquestionably being repeated pregnancies. Race seems to exert considerable influence, judging from the comparative but by no means complete immunity of the negro races. The predisposing influence of heredity and age has been already noticed.

Symptoms and Physical Signs.—Cancer of the cervix uteri has, as a rule, four symptoms, so characteristic that it is well to group these in the first place together. They are:

Pain;
Hæmorrhage;
Fœtid discharge;
General cachexia.

But the first important clinical fact connected with the symptomatology of malignant disease of the uterus, which it is right for the practitioner to keep in mind is, cancer of the womb, whether of cervix or body, may exist for a considerable time, and many or all of its characteristic symptoms remain in abeyance. I have seen extensive carcinoma of the cervix on several occasions, where the first thing complained of was hæmorrhage. This led to an examination, and the cancerous state was recognised for the first time. A few years since, I saw with Surgeon Robert Corbett (A.M.D.), a patient with a large malignant excavation of the cervix; she had consulted him for severe menorrhagia, which necessitated plugging and the use of ergot subcutaneously. She had not spoken previously to anyone for the uterine trouble. There was an old history of syphilis. She declared that she had no pain, and the only thing she had noticed was an occasional slight flooding. This she attributed to her '*change of life.*' The vaginal roof was not involved, but the entire cervix was excavated, and bled profusely on examination. Only lately had she noticed the foul odour from the discharge. There was no marked cachexia, and

nothing to attract attention. The pain of cancer is generally of a burning or lancinating nature, and is especially felt at night. Early in the disease coitus is painful, and the uterus sensitive. At other times intercourse gives rise to no pain. As the disease spreads to the vagina the pain is increased, and is more aggravated. It is felt with the movements of the bladder and rectum, and prevents sleep. Later still, the pain becomes intolerable, and the patient craves for morphia and sedative injections.

Hæmorrhage.—In the earlier stages of the disease, this is the most frequent symptom. At first, it may be simple menorrhagia. The menstrual flow is increased. Perhaps there is some slight bleeding with intercourse. But after a time it becomes metrorrhagic in character, and there is either a constant or periodical discharge. The half-watery, partly bloody, somewhat fœtid and erratic nature of this discharge in the earlier stages of malignant disease is always sufficient in itself to arouse suspicion. Finally, the tendency to hemorrhagia may be the symptom the most urgently demanding attention.

Fœtid Discharge.—I think it may be laid down as a safe rule in gynecological practice, polypus and pregnant conditions being excluded, that if there is hæmorrhage with fœtor, we should always be suspicious of malignant disease. The fœtor resulting from the putrescence of the disintegrating uterine tissue, we may look on as the most invariable accompaniment of cancer of the womb. The patient herself soon becomes aware of the odour. In the final stages of the disease, if not controlled, it pervades her clothes, and the room in which she is confined.

General Cachexia.—Sooner or later the involvement of the system in the affection, brought about by the pain, sleeplessness, anxiety, pelvic visceral trouble, loss of blood, and constant discharge, manifests itself. There is general emacia-

tion, and the face has the anxious, painful, and worn expression common to cancer elsewhere. In protracted cases there is a discoloured, almost icteric tint.

Physical Signs.—In the early stages of malignant disease there is not much to rely on as distinctive of malignancy. The hardness of the cervix, or the increased sensitiveness and slight hæmorrhage, are not in themselves sufficient to justify any positive decision. But the local conditions after a time leave little room for doubt. The soft and friable cervix, with the everted and hardened rim of cervical tissue; the proneness to hæmorrhage even on a slight examination with the finger; the detection of fœtor; the fixed uterus; the ragged and excavated appearance; the vegetating, fungus-like and bleeding mass, seen with the speculum, are not, with any exercise of care, to be mistaken for laceration, erosion, areolar hyperplasia, or sloughing polypus. If the bladder and rectum are involved, the distress becomes great, and the woman's cup of suffering and misery is filled to overflowing, release from which is only to be had in death.

In some instances where a doubt exists, early in the disease, between a benign and malignant condition, the microscope may be brought to our aid, and a small section removed and carefully prepared for examination. The typical appearances of the stroma, alveolar spaces, and nucleated cell, will enable us fairly to decide as to the malignancy or otherwise of a growth. Yet this must ever be looked on as only one of the several proofs of malignancy on the one hand, or benignity on the other. I have quite recently had several sections carefully made of a mammary tumour I removed for suspected scirrhus. In parts, the elements were those of scirrhus; in parts, of adenoma; while the greater portion examined presented the typical microscopical appearance of a cystic sarcoma. In those

cases in which we have to bring the microscope to our aid, in uterine disease, to decide this question, it is difficult to obtain sufficient tissue to exclude the possibility of malignant infiltration. There is in uterine cancer the same tendency to return, after removal, that stamps the disease in other parts. As it progresses, the general clinical features will depend to a great extent upon the degree to which other parts or organs are involved, and the accidental complication which may arise. The rectum and bladder, the pelvic and general peritoneum, the pelvic veins, and lymphatics, may each in turn be attacked. Septicæmia, parametritis, peritonitis, phlebitis, pneumonia, may follow.

Differential Diagnosis.—Cancer of the cervix has been mistaken for :

Laceration, with erosion and granular degeneration of the cervix.
Papillomatous growths (benign).
Hyperplasia of cervix.
Syphilitic ulceration.
Polypus of the cervix.
Sarcoma.
Follicular hypertrophy.
Intra-uterine sloughing fibroid.

Our diagnosis must depend on these clinical facts :

1. The comparatively rapid history of the case.
2. The absence of other proofs of syphilis.
3. The age of the patient, and the evidence of heredity.
4. The presence of the characteristic symptoms and signs of malignancy : especially—*pain*, hæmorrhage, ichorous leucorrhœa, fœtor, rectal distress, and pain on defæcation.
5. Immobility of the mucous membrane on the subadjacent tissue—early in the disease (Waldeyer)—and fixation of the uterus. Later on, the resistance

of the cervical canal to the action of a sponge-tent (Speigelberg).

6. The involvement of the adjacent vaginal wall.
7. The tendency to resist treatment, and to return after removal.
8. The cachectic appearance of the patient.
9. The physical condition, as felt with the finger and seen through the speculum.
10. Evidence of metastasis, and of malignant growths elsewhere.
11. The microscopic appearances.

Prognosis.—This is, as a rule, most unfavourable. The average duration of life in cases of cancer of the cervix is from twelve or eighteen months to three years. Such a termination as *spontaneous recovery* has been recorded. But this is so rare that its possibility, for practical purposes, is hardly to be taken into consideration. On the other hand, if the disease be detected early, and a radical cure be attempted by removal of the diseased tissue and the free use of the cautery, we shall in all probability prolong life, if we do not succeed in curing the disease. Death ultimately takes place from exhaustion, at times from septicæmia or peritonitis, occasionally from hæmorrhage.

Treatment.—We may divide the treatment under the heads of 'Radical' and 'Palliative.'

Radical.—Amputation of the cervix.

Sims's operation and caustic.

Simon's spoon or écraseur (Figs. 174, 175), and solution of bromine (Schroeder).

Simon's spoon and cautery.

Extirpation of the uterus (Freund).

Palliative.—The use of Paquelin's cautery.

Chloride of zinc.

Chromic acid.

Potassa fusa.
Nitric acid.
Carbolic acid.
Chlorate of potash.
Chian turpentine, internally (Clay).

Sedatives, internally :

Opium.
Morphia, subcutaneously.
Nepenthe.
Chloral hydrate.
Bromides.
Cannabin.
Hyoscyamus.

Sedatives, locally :

Belladonna and morphia suppositories.
Anodyne washes.
Vaginal pessaries.

Antiseptic and disinfectant vaginal washes.

Condy's disinfectant.
Chloral hydrate.
Carbolic acid.
Thymol.
Chloride of zinc.
Sulpho-carbolate of zinc.
Tincture of iodine.

Astringents :

Perchloride of iron.
Persulphate of iron.
Tannic acid.
Alum.
Acetate of lead.

Attention to the Rectum.—The state of the rectum is of great importance. The occasional use of enemata, saline water, aperient confections, soft food, will do much to pre-

vent the accumulation of scyballæ and consequent pressure on the diseased part.



FIG. 174.—Simon's sharp Spoon.

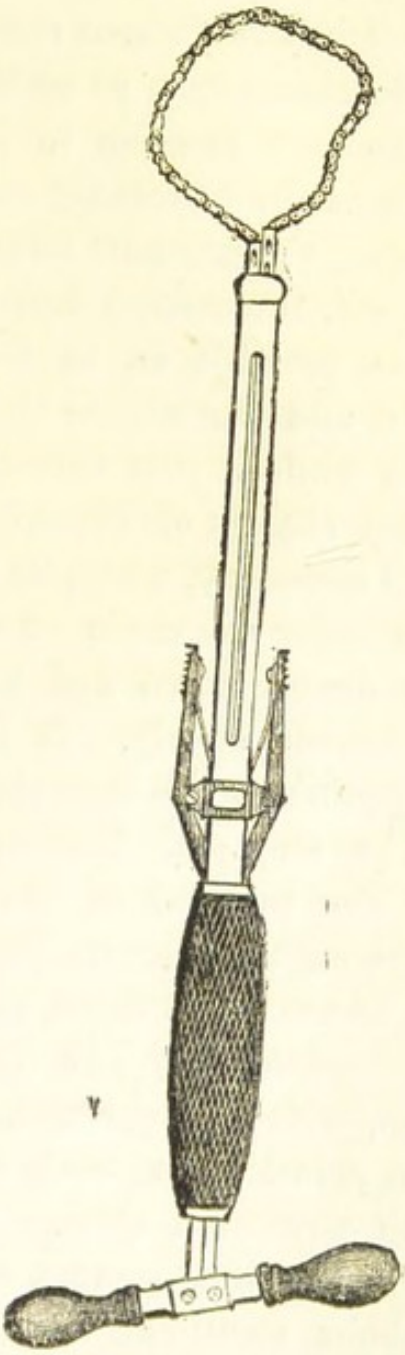


FIG. 175.—Chassaignac's Chain Écraseur.

Amputation of the cervix is performed either with the

galvanic écraseur, the wire or chain écraseur (Fig. 175), scissors, or Sims's uterine knife. In all these operations the dangers to avoid are—(*a*) Hæmorrhage, (*b*) encroaching on the bladder or rectum; and the most important points to attend to are —(*c*) complete removal of the diseased tissue by cutting through to the healthy structure outside it; (*d*) the destruction of any infiltrated tissue after removal of the disease by the écraseur-knife, or by the free use of caustic or cautery.

The best position to place the woman in is the semi-prone or the lithotomy one. The patient is anæsthetized. In using the galvanic écraseur, after the uterus is thoroughly exposed, the cautery loop is slipped on cold and pushed as far as possible on to the healthy tissue; the current is made, and the wire is tightened slowly; slight traction is made while it cuts through, so as to secure a funnel-shaped stump (Byrne of Brooklyn). After removal, an antiseptic or, if necessary, a styptic tampon is placed in the vagina.

In using the chain or wire écraseur, the uterus has to be first drawn down and fixed by volsella. The screw must be worked slowly. It is better to treat the stump with Paquelin's or the iron cautery.

The steps of Marion Sims's method are as follows: (1) The removal of the bed of the diseased mass in the supra-vaginal cervix with the knife, scissors, or spoon. (2) The cavity is dried, cleaned, and prepared for the styptic application. (3) The dried cavity is plugged with cotton-wool, which is squeezed, nearly dry, out of subsulphate of iron solution, or weak solution of carbolic acid saturated with powdered alum. The upper part of the vagina is packed with the same, and the lower portion with simple carbolic solution. In five days the plug is removed. A solution of five drachms of chloride of zinc to the ounce is now prepared. Some pledgets of cotton-wool are squeezed dry out of this and packed into the uterine cavity. Pledgets

of cotton-wool soaked in a carbonate of soda solution are used to plug the upper part of the vagina. The cotton-wool with the chloride of zinc is removed in five days.

Schroeder performs two operations, one an infra-vaginal, the other a supra-vaginal amputation, of the entire cervix. In both these operations the knife is used, and the wounds are closed by sutures. In the infra-vaginal operation, having first created anterior and posterior lips, a wedge-shaped portion is removed from both. In the supra-vaginal, the incisions are made through the vaginal mucous membrane in either fornix. The bladder and Douglas's pouch are avoided. The cervix is cleared of its cellular tissue, and the amputation completed by the final stitching of the anterior and posterior vaginal walls, which are united to those of the uterus.

With Simon's scoop (Fig. 174), and the subsequent application of the cautery and caustics, the disease may be most successfully removed.

The spoon must be applied freely, according to the extent of the disease. In all cases where the bladder, rectum, or vagina are involved, it is better not to interfere. If the cancerous infiltration has encroached on the wall of the bladder in front, or the peritoneum posteriorly, in using the spoon, care must be taken to avoid opening into the peritoneum, bladder, or rectum. After the use of the spoon, Paquelin's cautery, or the tampon of chloride of zinc, or the alcoholic solution of bromine (Routh and Schroeder, 1 pt. to 5) may be used. If the latter caustic is selected, some cotton-wool saturated with the solution is pressed against the surface of the wound, and the vagina is subsequently well plugged with a tampon either soaked in a solution of, or covered with, carbonate of soda. The bromine tampon may be left in for twenty-four hours. The application may be renewed in about ten days if necessary.

Extirpation of the Entire Uterus through the Abdominal Wall.

The operation may be performed through the abdominal wall or the vagina (Schroeder.) The operation associated with the name of Professor Freund of Breslau is one which does not come within the province of the ordinary practitioner. Even in the hands of the ablest operators the results have not been sufficiently satisfactory to warrant any definite conclusions. Full particulars of the steps of the operation will be found in all the larger works on Gynecology. From the statistics which have been published of the Porro-Freund operation in cases where malignant diseases of the womb complicated pregnancy, it would appear that this operation offers the patient the best chance. This question, however, is one more fitly discussed in a work on Obstetrics.*

Palliative and General Treatment.—Of the various caustics which have been recommended, and of those I have enumerated, the fuming nitric acid is the one which I prefer. Its mode of application has been previously noticed, as has also that of potassa fusa. Chromic acid (ʒi.—ℨi.) for relieving pain, arresting hæmorrhage, and checking the ulcerative process, I have always found of great service. The use of any of these escharotics must be combined with that of antiseptic and disinfectant applications, in order to keep the vagina free of the tissue débris, and prevent the horrible odour which is frequently present.

Sedatives.—Pain may be relieved both by local suppositories and pessaries and the internal administration of *sedatives.* Morphia, injected subcutaneously, is the best means I know of for relieving the pain of uterine cancer.

* See particulars of operation by Wells ('Treatise on Ovarian and Fibroid Tumours,' p. 519).

Its use should be postponed for as long a period as possible. It is in the last stage of the affection that it is so much needed. If it be administered in the early stages, it may lose its effect, and fail to give the looked-for relief when most needed. It is a good plan to alternate its administration with some other sedative, or a different preparation of opium, given either by mouth or rectum: chloral and the bromides, or cannabis indica, lupuline, hyoscyamus, monobromate of camphor, or conium. It is better also to give the full dose at a stated hour in the day, generally approaching night and when the parts have been dressed and the patient has had any other local treatment, as, for example, an enema or vaginal injection, completed.

Internal Constitutional Remedies.—The more carefully we consider all the vaunted cures of cancer, which from time to time have been practised either by fanatics or knaves, the more we must see that the only rational treatment for cancer is comprised in the one word—removal. Within the last few years, Mr. Clay of Birmingham has placed before the profession some apparently startling cures by means of the Chian turpentine. Having anxiously tried this medicine with several cases, both in the form of pills and in emulsion, I may record my experience of its effects. In several instances it certainly appears at first to arrest the disease, to lessen the pain, and to check hæmorrhage. In none was the effect permanent. In other cases it decidedly checked the hæmorrhage, but did not arrest the progress of the disease. In some it had apparently no effect whatever. When I now administer it, I do so, believing in its value as a hæmostatic rather than as a specific for cancer. The combination of arsenic and quinine I believe to be a valuable one in malignant disease of the womb.

Hæmorrhage may be controlled by styptic tampons applied to the part. These must not be left in longer than

twelve hours. The use of warm-water injection, 112° to 120°, should be tried. Internally, astringents may be given in combination with ergot. The *strength* of the patient must be maintained by a nourishing but not over-generous diet; milk when it can be taken and digested, and animal broths. If meat, poultry, or game cannot be digested, the different preparations of Messrs. Brand can be given.* Wine is generally necessary; the kind and quantity will depend on the circumstances of the case. Change of air, a well-ventilated sleeping apartment, cheerful companionship—in short, everything that can contribute to make the life of the patient as fairly comfortable as the terrible nature of the malady will admit, should be advised.

Carcinoma of the Body of the Uterus.

There are several reasons for studying cancer of the body of the uterus apart from that of the cervix. We may epitomize these as follows:

1. It is of comparatively rare occurrence.
2. It is a disease of more advanced life, occurring generally during or after the menopause.
3. It is found more frequently in nulliparous women.
4. Histologically it is more allied to sarcoma or adenoma.
5. The symptoms are more obscure than in malignant disease of the cervix.
6. In this disease the body of the uterus is the part affected, the cervix being comparatively free: the body may be enlarged, or hollowed out and filled with the cancerous mass; or the infiltration may occur principally into the parenchyma.

Pathology.—The disease may commence either in the epithelium of the uterine glands or in the parenchyma. There may result a general thickening of the mucous

* Valentin's meat juice or the preparation of Messrs. Savory and Moore is an admirable means of administering nourishment.

membrane with disintegration and discharge; or scattered nodular deposits or a diffused infiltration may be found. Perforation of the uterus may follow, with adhesion, or perforation may take place into any of the adjoining organs.

Diagnosis.—If any patient over forty years of age presents herself, complaining of pain, intermittent hæmorrhage, fœtid discharge of a watery nature, at times coloured, especially if these symptoms make their appearance after the menopause and where menstruation has ceased for some

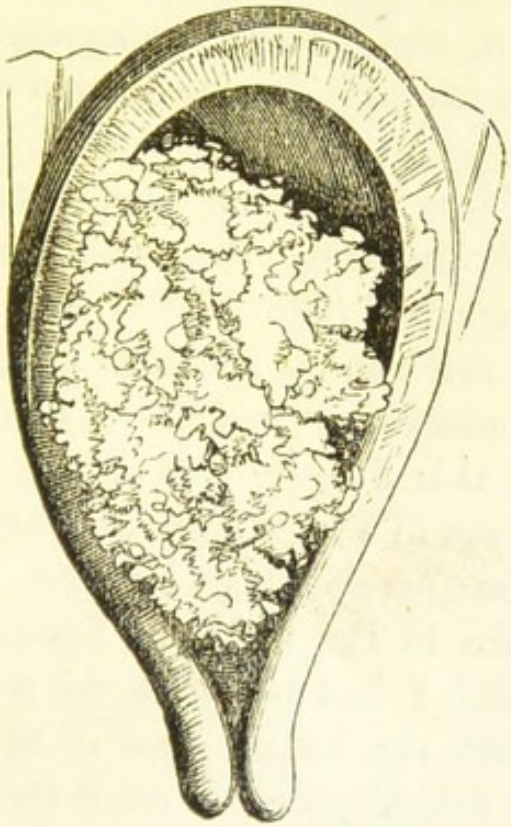


FIG. 176.—Carcinoma of the Body of Uterus (after Sir J. Simpson.)

time, cancer of the body of the womb may be suspected. If on digital examination the cervix is found healthy, the fundus enlarged, and with the uterine probe some foul-smelling and discoloured discharge can be wiped from the cervix, our suspicions should be increased. The safe rule in practice will be to dilate the cervix and examine the cavity with the finger, removing a portion of the uterine

tissue for microscopical section. This dilatation and careful attention to the history of the case will enable us to decide as between cancer and a *sloughing intra-uterine fibroid* or *polypus*. The chance of any mistake being made in regard to the *products of pregnancy*, if these symptoms should arise in the childbearing period, should not be lost sight of. If we explore the cavity of the uterus, and find this enlarged, and a soft mass protruding into it, which bleeds readily and imparts foul odour to the finger, we may feel pretty certain of the disease being cancer. If, in addition, the uterus is fixed by adhesion, and there is accompanying cachexia, we need have little doubt. The microscope will dissipate any that remains.

Treatment.—There is nothing to add to what has been already said in discussing the treatment of malignant disease of the cervix. The clinical fact drawn attention to by Dr. Matthews Duncan is not to be forgotten, namely, the obstinate costiveness and distension of the rectum which occur in this disease. In a case of cancer of the body of the uterus in a lady aged fifty-five years, the fatal termination was precipitated by the accumulation of scyballous masses in the rectum. Every means failed to remove these, and I had to dilate the rectum and remove some masses with the hand. One of these was of stony hardness; with difficulty I could cut it through with a knife.

Sarcoma of the Uterus.

Etiology.—Sarcoma differs from carcinoma in—

Its commencement in the connective-tissue;

Its slower course;

Its connection with sterility — twenty-five out of sixty-three cases (Gusserow).

Its discharge is not so offensive and is more watery,

containing greyish-white shreds of sarcomatous tissue (Hart).

Pain is not so invariable a symptom. Thomas accounts for the absence of pain in some cases, to which special attention has been drawn by Professor A. R. Simpson, by the portion of the uterus in which the sarcoma occurs. If the sarcomatous growth

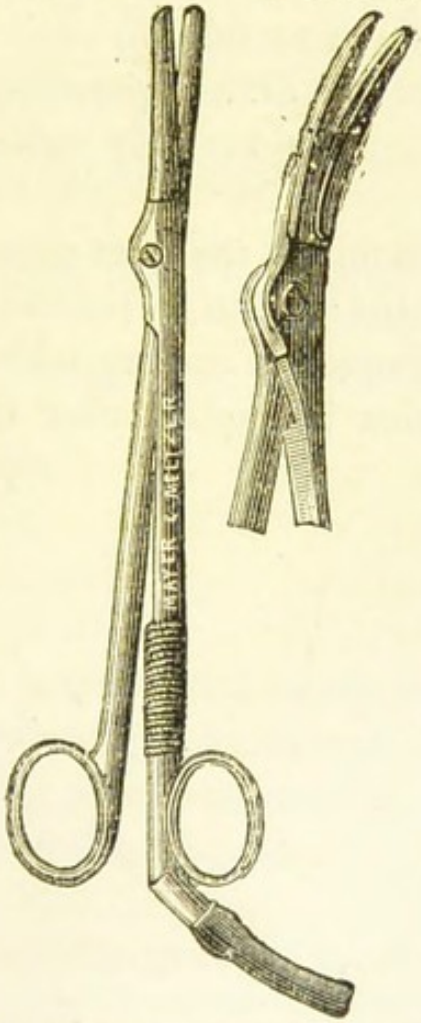


Fig. 177.—Cautery Scissors.

be parenchymatous the pain is severe; not so, he thinks, if it be diffused in the endometrium.

Sarcoma agrees with carcinoma clinically in—

The tendency to recurrence;

The hæmorrhage which attends it;

The foul discharge after ulceration of the surface;

The pain;

The soft and friable nature of the growth in many instances;

Its fatal termination (in septicæmia, hæmorrhage, peritonitis).

For diagnostic purposes, sarcoma can only be clearly distinguished from carcinoma, fibroid growth, or chronic hyperplasia, by means of the microscope and the detection of the characteristic spindle or round cell.

Treatment.—If it be diffuse parenchymatous sarcoma, ablation of the uterus is the only radical treatment that can be considered.

If the endometrium be the part attacked, all sessile or pedunculated growths have to be removed with the curette, wire écraseur, or Paquelin's cautery-scissors. Carbolic acid or other caustic must be applied after the removal of the growth.

CHAPTER XXII.

AFFECTIONS OF THE FALLOPIAN TUBES AND OVARIES.

Fallopian Tubes.

Abnormalities.
Salpingitis.
Stricture.
Dilatation.
Pyo-salpinx (pus retained in the tube).
Hæmato salpinx (blood retained in the tube).
Hydrops tubæ (serum retained in the tube).
Adhesions and displacements.

[I have already incidentally referred to the affections of the greatest practical interest to the practitioner and student—salpingitis and its consequences, stricture, adhesions, displacements, dilatation. I shall, therefore, pass on to the consideration of those diseases of the ovaries that are met with constantly in practice. For a more complete description of the pathology of ovarian diseases and the steps of the operation of ovariotomy, I would refer both practitioner and student to the treatises —Wells on 'Ovarian and Uterine Tumours;' Gaillard Thomas, 'Diseases of Women;' Peaslee on 'Ovarian Tumours;' Atlee on same; Schroeder, 'Diseases of the Female Sexual Organs;' Robert Barnes on 'Diseases of Women;' Goodell, 'Lessons in Gynecology.' I specially advise both practitioner and student to read the admirable, clearly written and practical 'Lessons' of Goodell.]

Ovarian Diseases.

Abnormalities.
,, absence.
,, imperfect development.
Atrophy.
Displacement (*Hernia*).
Apoplexy (rupture of vessels, and sanguineous effusion).
Ovaritis.
,, acute.
,, chronic.
Solid tumours.
Carcinoma.
Fibroma.
Tubercle (Wells).
Cystic tumours.

Wells, for descriptive purposes, thus classifies simple ovarian cystic tumours:

'1. *Ovarian:* Enlarged Graäfian follicles.
'2. *Extra-ovarian:*
'(*a*) Cysts of Wolffian body.
'(*b*) Cysts of broad ligament.
'(*c*) Cysts of Fallopian tubes.
'(*d*) Cysts developed in the subperitoneal tissue of the pelvis, or abdomen.
'(*e*) Cysts developed from aberrant ova.
'3. Compound adenoid tumours:
'1. *Multiple*, consisting of cysts aggregated together.
'2. *Proliferous*, or parent cysts, filled with cysts of secondary growth.'

Cysto-carcinoma.
Cysto-sarcoma.
Dermoid cysts.

ORIGIN OF OVARIAN AND EXTRA-OVARIAN CYSTS.

Simple ovarian:

1. Graäfian follicles (Wells, Wilson Fox, Rokitansky, and others); or,
2. Interstices of the stroma (Wells, Waldeyer, Lücke, and others).
3. Partial dilatation and partial obstruction of enlarged and thickened bloodvessels (Noeggerath, Harris, and Doran).

Extra-ovarian:

Tubules of the parovarium.
Terminal bulbs of the Wolffian body.
Subperitoneal tissue.
" " connecting peritoneum.
Fallopian tubes and uterus.
Fallopian tube and ovary. (During the grasping of ovary by the fimbriated extremity of the Fallopian tube in menstruation.)

The more recent researches of Messrs. Harris and Doran would point rather to the degenerative changes occurring in the follicles than in the stroma.

The changes occur in the Graäfian follicles that have undergone involution without rupture.

'They are not due to inflammation.'

'They begin as exaggeration of the normal process of involution, which is never a mere disintegration and degeneration of the follicle.'

From the researches of Sinéty and Malassez, it would appear that the cysts may be developed from hollow epithelial cylinders. These do not contain ova. Dr. Galabin says that he has found 'a similar glandular growth, commencing from Graäfian follicles, every stage being visible, from that of a single pouch or diverticulum, in the wall of

the otherwise spherical follicle.' These epithelial tubes are not true Pflüger's ducts, from which Waldeyer considers ovarian tumours are developed. This is a new adenomatous formation; the cystic development is secondary. 'The first trace of the cyst,' says Schroeder, 'the *ovarian follicle*, is probably always congenital; indeed, we shall have to go even further than this, inasmuch as small degenerated cysts are frequently found in new-born infants, a fact which seems to prove that the very beginnings of the tumour-formation are congenital, and that these beginnings persist for a long time (almost always until after puberty) without further development.'

But he does not regard any form of uterine cystoma as simply congenital 'in the sense that the fœtal glandular follicles, which give rise to its development, are preserved after birth, but that small cysts (sometimes as large as peas) are themselves congenital, which remain of the same size during childhood, and later begin to undergo a further development.' Cysts may develop after the rupture of the follicle, from the corpus luteum, after closure of the orifice where the rupture occurred. The presence of ova in the cysts has been proved by Rokitansky, Ritchie, and others. Colloid material is found in the small cysts at the time of birth, but the development of the cyst does not take place until after puberty. Proliferous growth of cysts (multilocular), according to Wilson Fox and Waldeyer, is due to glandular secondary formation from the walls of the cyst. In one variety the epithelial elements take the principal part in the proliferation; in the other, the connective-tissue forms papillary growths, which project into the interior of the cyst. Both varieties of growth may be found in the same cyst. In some tumours the excessive development of gland-tissue may convert the cyst into a solid mass. Sir Spencer Wells, in explaining the mode of proliferation in

cysts, points out that the Graäfian follicle is itself a proliferous cell—in the generation of the germinal vesicle, germinal spot, and the further cell formation through the spermatic influence. Blasting of the ovum, from any cause, gives rise to abnormal cell-development, which shows itself in 'eccentric shapings' and groupings, and ultimately in 'pouch-like projections.'* The proliferous cyst soon fills with progeny. The surfaces of these secondary growths are covered with a 'generation of epithelium,' which may in their turn form cysts—new cystic productions.

Pathological Anatomy.—The unilocular character of the cyst depends upon the absorption or bursting of the wall intervening between the two cysts. This is due to pressure. The rupture becomes larger, and finally the smaller cyst forms a rounded prominence on the wall of the larger one (Schroeder). By the fusion of several cysts in this manner, the unilocular cyst is formed. The septa found in the interior of the cyst are the remains of the old cyst-wall. The multilocular is the primary condition, the unilocular is the secondary product of this gradual merging of several cysts into one. The entire cystoma consists of a pedicle, cyst-wall, and fluid contents.

The Pedicle is made up of the ovarian ligament, the broad ligament, the Fallopian tube, and the connective-tissue.

'The *walls*,' says Wells, 'of even these enormous sacs are, after all, in their simple forms, only the continued growths of some of the original ovarian tissues. No new elements are superadded. There is only a surplus of material, malarranged and out of place.' At first the cysts are seen projecting from the stroma of the ovary, or enveloped by its fibrous tissue. The coats cannot then be distinguished from the natural structure of a Graäfian follicle: 'with growth comes greater thickness, opacity,

* A process of repeated germination.

and firmness.' The coat consists of its epithelial lining, the fibrous layer, with its nerves and arteries and veins, and the external covering or peritoneum. The thinnest portion of the tumour is that which is most distant from the pedicle. Pressure, over-distension, and interruption of the circulation may lead to degeneration and rupture of the sac-wall (Wells).

Extra-ovarian Cysts may form in the broad ligament; in the tubules of the parovarium from the expansion of the terminal bulbs of the Wolffian body, or they may develop in the tissue connecting the peritoneum with the uterus. Cysts of the parovarium are generally unilocular. They contain a clear, watery fluid of low specific gravity, and with very little albumen. The cyst may grow to a very large size. The peritoneal covering peels off readily after death, thus distinguishing the parovarian cyst from the ovarian (Duncan). The simple nature of the fluid when examined during life may enable the surgeon to diagnose a parovarian from a true ovarian cyst. Such cysts may rupture, and a spontaneous cure may follow.

The Contents of Ovarian Cysts vary. In the simpler kinds there is a pale, straw-coloured fluid, which is of a specific gravity of 1010—1020, containing little or no albumen, and which is not spontaneously coagulable. 'Ascitic fluids,' says Wells, 'never contain more solid matter than the serum of the blood, and the greater number of ovarian fluids have even less; but any serous fluid taken from the abdomen of a woman which, when filtered, leaves after evaporation a dry residue in excess of that which would be found in blood-serum, may be pronounced upon as positively ovarian.' In other ovarian cysts the fluid is thick and gelatinous, not coming readily through the canula on tapping, and of a colloid nature; this is specially the case in multilocular cysts. Occasionally it is of a grumous

character, from the quantity of fatty and caseous matter present. It may contain both pus and blood. Thus both the colour and consistency vary considerably. An important practical point is that tapping appears to increase the density of the fluid in an olygo-cystic tumour.

Chemical Characteristics of the Fluid of Ovarian Cysts.—1. Ovarian fluid does not spontaneously coagulate. 2. A small quantity of the fluid can be laid aside and examined after twenty-four hours for any shreds or filaments of fibrine; in ascites these filaments are, as a rule, present. 3. Glittering particles of cholesterine are occasionally seen in ovarian fluid—very rarely in ascitic fluid. 4. The dry residue of the fluid from an ovarian cyst, when filtered, should not weigh (C. Méhn) more than 70—80 grammes per kilogramme. This test hardly leaves any room for doubt. 5. *Paralbumen and Metalbumen.* Paralbumen is detected by the passage of a stream of carbonic acid gas through the filtered fluid, and the formation of a precipitate. A portion of the fluid is boiled in a test-tube; to the coagulum of albumen which forms, twice the volume of strong acetic acid is added. The coagulum is boiled and shaken. True albumen coagulum is not affected. That of paralbumen or metalbumen either dissolves or forms a transparent, jelly-like mass. The test I have been in the habit of applying for metalbumen is that recommended by Thomas. The fluid is digested with absolute alcohol for three days. The precipitate is filtered off and heated with distilled water. This fluid is again filtered, and the metalbumen precipitated by sulphate of magnesia. But it is not to be thought that in the presence or absence of these albuminous products we have an infallible test of the character of the fluid which is causing abdominal distension. In the case of a multilocular cysto-sarcomatous tumour, removed by me from a girl aged twenty, and exhibited in 1883, at the Academy

of Medicine in Ireland, the diagnosis was obscured by the presence of a large quantity of ascitic fluid, which distended the abdomen. It was found on removal of this tumour that a few of the superficial cysts had ruptured, and this explained the ascites, which could not be accounted for before operation, all the viscera being healthy. She had been twice tapped. On drawing off some of the fluid prior to operation, for the purpose of diagnosis, it was found to contain some slight traces of paralbumen, and yet it did not spontaneously coagulate, as ascitic fluid would. A few of Drysdale's granular cells were found in different portions of the fluid examined. The operation proved the fluid to be in greater part ascitic, the few cysts which had burst on the surface of the cystoma not being larger in size than a hen's egg. *Eischwald* has divided the organic contents of the fluids found in cysts under two heads, and classified them thus:

1. Mucous.
   - Colloid particles and substance.
   - Mucin.
   - Muco-peptone.
2. Albuminous.
   - Albumen.
   - Paralbumen.
   - Metalbumen.
   - Albumino-peptone.

The inorganic *débris* amounts to 8·27 parts in 1000, and is principally composed of soda and salts or soda and potash. Not the least interesting feature connected with the pathology of ovarian cysts is the form of slow digestion of the solid portions of the cyst through the presence of these ferments, muco-peptone and albumino-peptone. The general emaciation which accompanies the growth of the larger tumours is accounted for.

Microscopic Appearances.—With the microscope various

elements are found, according to the nature of the cyst, and the inflammatory or degenerative changes which have occurred in it. Thus fat-globules, crystals of cholesterine, pus, blood, and epithelial cells, are frequently present. But the most characteristic cell is that which is associated with Dr. Drysdale's name. This granular cell has no nucleus; the addition of acetic acid makes the granules more apparent and the cell more transparent, but does not bring any

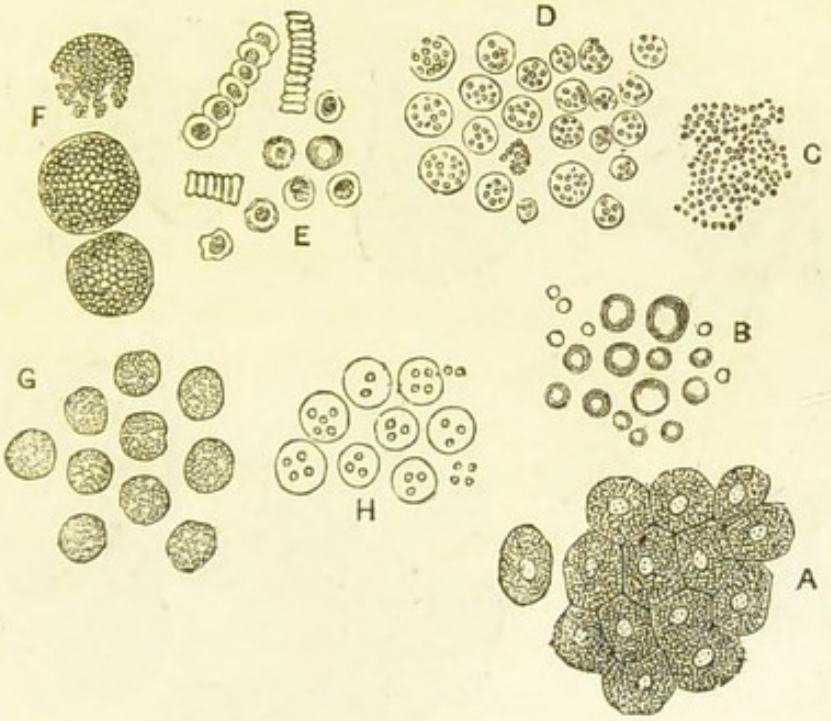


FIG. 178.—Microscopic Appearances of Ovarian Fluid (Drysdale). A, epithelial cells; B, oil-globules; C, granular matter; D, granular cells (Drysdale's); E, blood-corpuscles; F, inflammatory globules of Gluge; G, pus-cells, before addition of acetic acid; H, pus-cells, after addition of acetic acid.

nucleus into view, while ether has hardly any effect on it. Not that this cell can be looked on as pathognomonic of an ovarian cyst. It is believed that these granular cells are but the nuclei of cells which have undergone fatty degeneration (Garrigues). But perhaps the most important light the microscope can throw on the nature of an abdominal tumour is in the diagnosis of malignant ovarian disease.

In a paper read before the Edinburgh Medico-Chirurgical Society, in 1875, Dr. James Fowlis drew attention to the 'proliferating masses of epithelium' found in the ascitic fluid surrounding a malignant ovarian tumour and in malignant peritonitis. By the detection of these sprouting cells he was enabled to diagnose accurately the malignant nature of the tumour. (The reader can refer to two interesting papers on this subject by Dr. Fowlis, in the *British Medical*

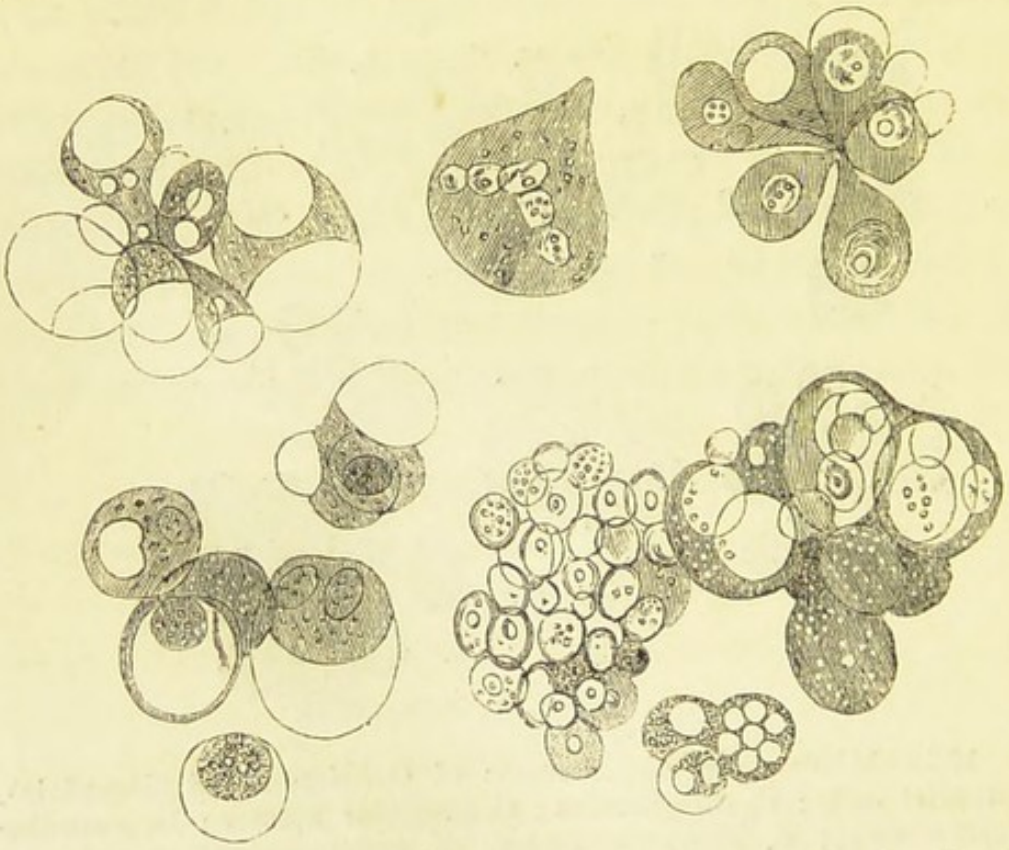


FIG. 179.—Proliferating Malignant Cells found in Ovarian Fluid (Sir Spencer Wells).

Journal of July 20, 1878, and November 2nd, 1878.) I quote a few sentences from the first of these papers: 'Malignant ovarian tumours are generally surrounded by ascitic fluid. The ascitic fluid should in all cases be examined by the microscope. If in such ascitic fluid we find a large number of masses of sprouting, vigorously growing cells, some of which masses may be seen by the naked eye, we may safely conclude that the peritoneum is the seat of a

most serious affection, and that there are numerous adhesions between the tumour and the neighbouring parts, which will prevent its complete removal by ovariotomy. If these masses be found in *bloody* ascitic fluid, we may conclude that there are vascular villous growths on the peritoneum; and if, in addition, the glands in the groin or elsewhere be enlarged, the tumour and peritoneal growths are certainly carcinomatous.' He specially refers to the im-

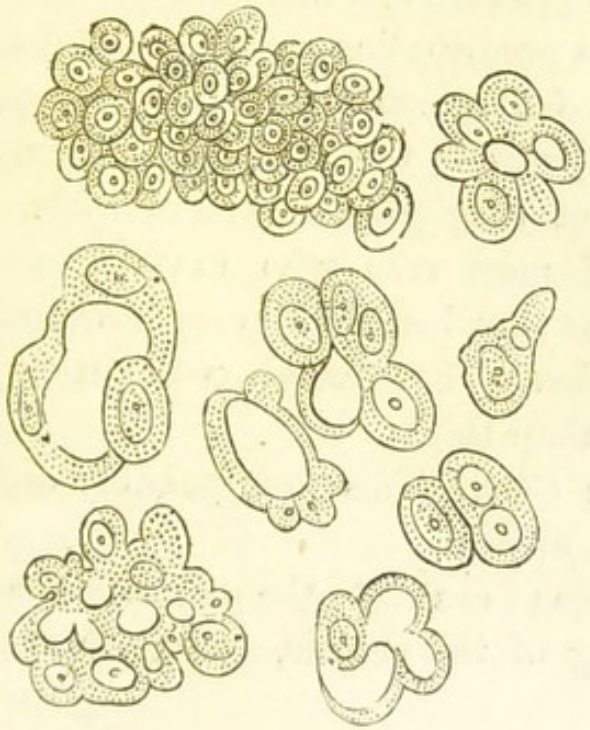


FIG. 180.—Dr. Fowlis's Malignant Cell-groups (borrowed from Hart and Barbour). The cluster of cells in the left-hand corner were found in ascitic fluid, surrounding a large cysto-sarcoma of the ovary; the remaining cell-groups were found in the deposit from ascitic fluid surrounding a large, soft, malignant tumour of ovary. (Drawn with camera lucida under a power of 350 diameters; No. 3 ocular.)

portance of finding these sprouting masses in the surrounding fluid, as, if they are still confined to the cyst-fluid, the growth may be removed without risk of future peritoneal infection. Fig. 180 (borrowed from Hart and Barbour) shows some of these sprouting cell groups.

Causation.—We might assume that during the period of life when there is active ovarian excitement and frequently

recurring ovarian congestion a woman would be more liable to ovarian disease. And so it is found in practice that by far the larger number of cases occur from twenty to forty. Thus, of Mr. Wells's 1000 cases operated on from 1858 to 1880, 531 were from 20 to 40 years of age, and 228 from 40 to 50. There does not appear to be any specific cause to which we can attribute the development of ovarian tumours. But we may assume that all of those influences which tend to produce and maintain ovarian congestion are likely to act as predisposing causes of the disease.

Duration and Termination.—It would appear that from one to three years is the average duration of the disease when it is not surgically interfered with. But it is the experience of most men who have seen many cases of ovarian disease that instances every now and then occur in which the disease has lasted, without any interference, much longer than this.

Spontaneous Cure.—This may possibly occur in either of the following ways:

1. Discharge of cyst into the peritoneum and absorption.
2. Twisting of the pedicle, and gradual strangulation of its vessels.

Suppuration of the Cyst Wall.—This often leads to peritonitis, hectic, and death. But even under this most unfavourable of circumstances (suppuration) the operation of ovariotomy has been performed successfully.

Twisting of the Pedicle may lead to fatal peritonitis, or gangrene and septicæmia.

Discharge of the Contents of the Cyst, or of blood from the vessels of the cyst-wall, may cause fatal hæmorrhage into the interior of the cyst, and death.

Death may result from Exhaustion, consequent upon the long-continued drain on the system, repeated attacks of peritonitis, the persistent interference with the functions

of the other vital organs, such as the lungs, the pelvic viscera, the kidneys, and the bowel.

(For further particulars of the diagnosis of tubo-ovarian, dermoid, and sarcomatous cysts, see such works as those of Wells or Thomas.)

Diagnosis of Ovarian Cysts.

That practitioner will have the least chance of committing an error in the diagnosis of an abdominal tumour who commences his examination of the case, recollecting the many possible and likely sources of error which he has to avoid. I have been in the habit of directing the attention of my class to the carefully collated list of forty-three diseased conditions which Dr. Gaillard Thomas* shows may be mistaken for ovarian cystoma. It must also be remembered that it is not in the well-marked case of ovarian cystic disease that the careful surgeon is apt to fall into error. Rather is it when he is confronted by a case in which some obscure and unfamiliar signs are present, and when the history of the growth of the tumour is not clear, or that evident complications exist, such, for example, as pregnancy, great obesity, ascites, cystic degeneration of any of the abdominal viscera. But, independently of the nature of the tumour, there are other points which he has to decide, and which are of vital moment to the woman. Such are, its benign or malignant character, the presence of adhesions, the amount of solid matter present and its position, the general constitutional state of the woman, and the evidence of any grave affection of the lungs, heart, kidney, liver, spleen, bowel, or uterus, which may complicate the operation of ovariotomy, and contra-indicate its performance. Overweening self-confidence and ignorant assurance—which

* 'Diseases of Women,' 5th edition, 1881, p. 705.

we frequently meet with as weedy growths, springing from the uncultivated soil of what some are pleased to call their '*experience*,' and which, when we come to inquire into its claims to attention, we find means nothing more than the accumulated heaping of ignorance on ignorance in the mental ashpit, where the fungus of empirical experience is the only product that remains to assert itself amidst the stagnant *débris* of an uneducated and routine observation —will nowhere more startlingly meet the rebuff they merit than in the case of over-confident diagnosis of abdominal tumours.

It may be well to enumerate those conditions* which we are most likely to confound with ovarian cystic disease :

*Great obesity.
*Hysterical tympanites and phantom tumour.
*Fæcal tumour.
Dilatation of the stomach.†
Distended bladder.
Hæmatometra.
Physometra.
Hydro-salpinx.
*Ascites.
Encysted dropsy.
*Hæmatocele.
Cystic disease of the parovarium.
* „ „ kidney.

* Those conditions marked so (*), I have myself known mistaken for ovarian disease.

† In the Cork County Hospital, a few years since, I placed under the care of my colleague, Dr. Edward Townsend, a girl sent to me by Dr. Hill, of Fermoy, who rightly diagnosed enormous gastric distension. Before verifying his diagnosis I placed the girl twice under chloroform, so great was the distension and accumulation of liquid and gas in the stomach. She was under the care of Dr. Townsend for some months in hospital. She went out with the swelling greatly reduced, and I believe now enjoys fair health.

Cystic disease of the spleen.
* " " liver.
" " uterus.
*Uterine fibroma.
Enlargements of the liver and spleen.
*Disease of the abdominal glands.
*Omental tumour.
Displacements of liver and spleen.
*Pregnancy.
Extra-uterine fœtation.
Hydramnios.†
Death of fœtus.
Pelvic abscess.
*Accumulation of pus or serum in the peritoneal cavity.
*Malignant disease of the uterus.
" " " peritoneum.

Examination of a Suspected Case of Ovarian Tumour.

To avoid repetition I must refer the reader to the chapters on 'The Examination of a Case,' for the steps which must be followed in completing a diagnosis, and the appliances necessary to conduct such examination. I shall here classify the positive and negative signs on which we rely in arriving at a diagnosis. Before doing so it may be well to refer to the most important facts in the history of an ovarian growth, and which assist in diagnosis.

† I went, some years since, with the late Dr. Gregg, of Cork, prepared to tap a case in which most urgent symptoms of dyspnœa and lung complication threatened life, from what we both decided, after most careful examination, was an enormous collection of ascitic fluid. There was albumen in the urine, and great œdema of the lower extremities. Before finally puncturing the abdominal wall, I passed the uterine sound, and discovered the enlarged uterus. The patient was delivered within twenty-four hours of a healthy child, who is alive to this day.

History and Early Symptoms.—The tumour has commenced at one side, and has at first caused but little distress. This, however, is by no means an absolute rule. There may be dysmenorrhœa, pelvic and reflex pains, and while the tumour is still pelvic, irritability of the bladder and rectum, or hæmorrhoids may form from pressure; all these early symptoms are aggravated if the cyst-wall forms adhesions, and if the tumour be prevented from rising into the abdominal cavity. The general health is at first but little interfered with. There is no œdema of the upper or lower extremities. There



FIG. 181.—Ovarian Tumour compressing Thorax (after Sir Spencer Wells).

is not much to rely on in regard to the menstrual periods. There may be no interruption of menstruation; there is occasionally even menorrhagia; or, on the other hand, the flow may become in the first instance scanty, and finally cease. The breasts may slightly enlarge, and the characteristic appearances of early pregnancy (with the exception of the secretion of milk*) may be present. Obscure peritoneal pains are sometimes complained of—the result of distension or stretching of the peritoneum, or twisting of the pedicle. Nausea and vomiting occasionally accompany such pains.

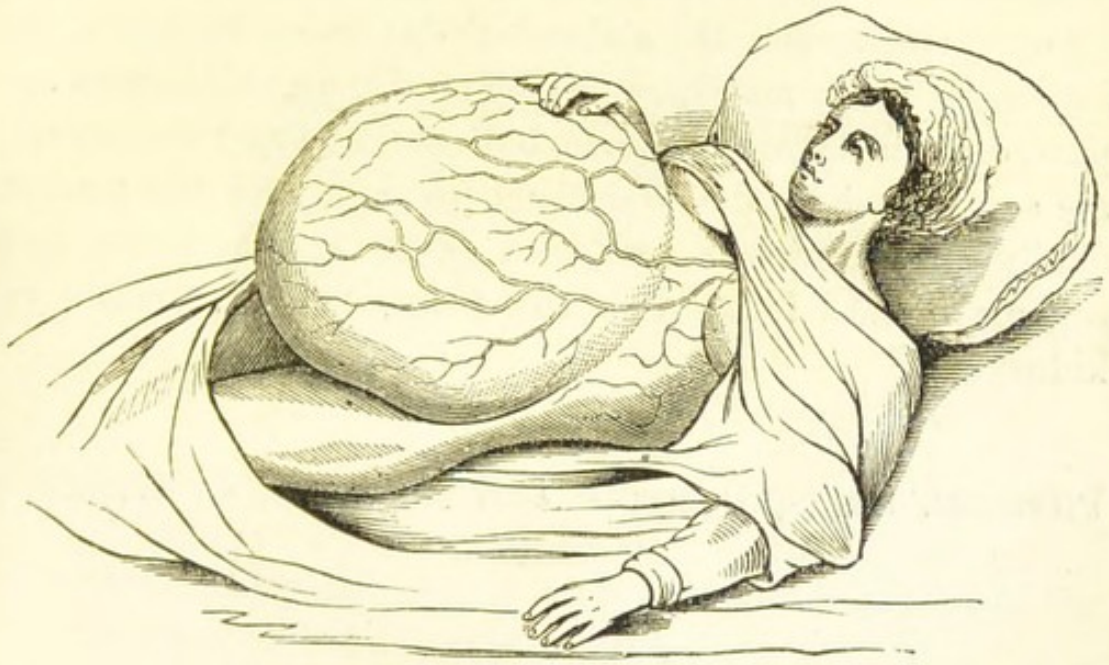


FIG. 182.—Ovarian Tumour (Bright).

After the Tumour rises above the Pelvis.—The growth may still be distinctly asymmetrical, but gradually it assumes a central position. There is not any regularity in the rate of growth. Some tumours may increase very slowly, or remain quiescent for a time; others develop with extraordinary rapidity, each week producing a marked change in the shape and size of the abdomen. The growth may now be attended with abdominal tenderness in parts, or

* See remark on prolonged lactation.

peritoneal pain, while the pelvic symptoms are relieved. The countenance gradually begins to change. Emaciation, anxiety, suffering, confinement, begin to tell in the expression of the face. As Wells graphically describes the 'facies ovariana' of a case figured in his recent work: 'The emaciation, the prominent, almost uncovered bones, the expression of anxiety and suffering, the furrowed forehead, the sunken eyes, the open, sharply defined nostrils, the long, compressed lips, the depressed angles of the mouth, and the deep wrinkles curving round these angles, form a face which is strikingly characteristic.' Should relief not come by operative means, the abdominal distension increases, the superficial veins may become enlarged, lineæ albicantes appear, constitutional symptoms, both thoracic and abdominal, are aggravated by the increasing pressure, and the patient finally sinks from the combined effects of emaciation and organic disease induced in the heart, lungs, stomach, or kidneys.

Physical Signs, Positive and Negative, of Ovarian Tumours.

Positive Signs.

A tumour at first noticed in either inguinal region, gradually becoming central; the greatest circumferential measurement being below umbilicus; lateral measurement in the early stages increased from the middle line to the vertebral column, or from the anterior superior spine to the umbilicus of the side affected.

Outline of the retained tumour can be defined.

Abdominal integument tense, frequently thinned—otherwise not abnormal.

Later stages: distension of abdominal veins, and lineæ albicantes seen.

Fluctuation limited to the dull area. Wave most distinct, but not so superficial as the ascitic wave.

Dulness on percussion central; not much affected by change of posture; resonance in the flanks from the intestinal displacement.

Uterus frequently displaced behind the cyst; on vaginal examination the uterus is frequently found drawn up from the examining finger; the cervix may be shortened.

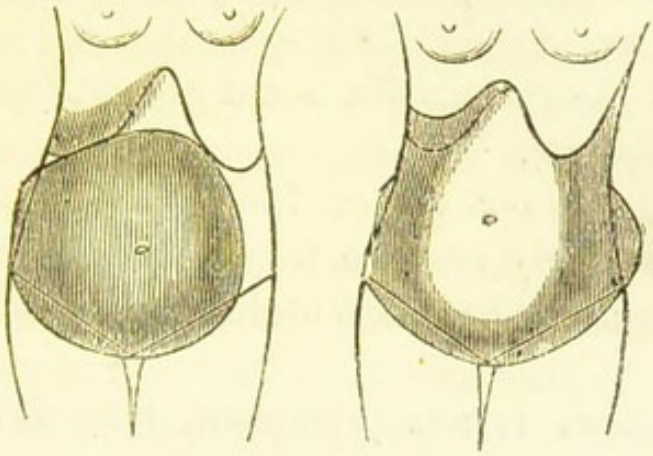


FIG. 183.—Dull Areas in Ovarian Tumour and Ascites (Barnes).

Aortic pulsations (Atlee) are transmitted through the tumour.

The 'facies ovariana' is present.

The fluid drawn by aspiration or paracentesis is usually of an amber colour, but varies in colour and consistence; is viscid and sticky, of specific gravity 1015 to 1030; contains paralbumen and metalbumen; when examined under the microscope various forms of epithelial cells are seen, mixed with cholesterine particles, and perhaps oil-globules or blood-cells. The characteristic cell described by Drysdale as pathognomonic is a non-nucleated granular cell on which ether has no effect, and acetic acid only renders the granules more

distinct. Exploratory incision (as the first step of ovariotomy) detects the bluish-white, or glistening and smooth wall of the cyst.

Negative Signs.

The general health does not rapidly deteriorate.

The catamenia are not generally absent, though they may be scanty.

There is seldom menorrhagia.

There is no cardiac, renal, or hepatic disease to explain the dropsy.

Œdema of the extremities is not present (until very late in the disease).

The tumour is not central from the first; it does not proportionately increase from month to month, as in the case of the pregnant uterus; it is not hard and resisting.

The umbilicus is not prominent, bulged out, watery-looking, or thinned.

The integument is not materially altered in appearance or œdematous; the distension of the superficial veins, as a rule, comes on late in the disease.

The cachexia of malignant disease, and of organic disease in the viscera, or of malignant ascites, is absent.

The most important signs of pregnancy are absent, such as:

Milk in the breasts. (Not necessarily absent. An ovarian tumour may develop during prolonged lactation);

The fœtal pulsation;

Uterine contractions;

Balottement. (Not necessarily absent. A solid tumour may be contained in an enlarged cyst, and

give the sense of balottement on practising this test.)

The os uteri is not soft and patulous.

The uterine cavity is not (generally) enlarged.

The uterus does not move with the tumour, nor is the uterus found to be continuous with it (recto-vaginal and utero-abdominal methods).

There is no history of rigors, hectic, great pain, and nightly exacerbation of temperature.

The tumour does not lessen or disappear on the administration of chloroform, nor can any considerable depression be made in it under the influence of the anæsthetic.

It does not diminish perceptibly when the bladder is emptied.

There is no inordinate obesity in other parts of the body.

The fluid is not of very low specific gravity; it is not pure serum; it does not spontaneously coagulate; it does not, when kept, deposit filamentous particles of fibrine. The characteristic fibre cell of Atlee is present.

Paracentesis does not cure the disease.

Exploratory incision does not expose a dark-coloured and vascular tumour.

Diagnosis of Adhesions.

After his unrivalled experience in ovariotomy, Sir Spencer Wells remarks: 'Practically, therefore, in deciding whether ovariotomy should be recommended or not, adhesions to the abdominal wall may be almost disregarded.' Though this may be so in the hands of so skilled an operator as Sir Spencer Wells, it is widely different with those about to operate for the first time, or who can only count their one ovariotomy for every twenty of his. How much more so must the presence of adhesions to the pelvic viscera and

intestines influence the chances of a successful operation in the case of a young operator! 'Adhesions low down in the pelvis,' says the same author, 'are, on the contrary, of great importance. The difficulty is to separate them without serious injury to the rectum, or bladder, or the ureters, or to large bloodvessels, or to nerves. . . When deep-seated and very intimate, the dissection necessary is out of the question in the living patient, and gives no small trouble in the dead.' To detect adhesions to the abdominal wall the patient is placed on her back, with the knees raised, opposite a good light, and the abdomen must be entirely uncovered. The proofs that Sir Spencer Wells relies on that the cyst is free of adhesions to the abdominal parietes are as follow: (*a*) Movement of the cyst-wall with the acts of respiration (percussion enables us to limit the superior border of the cyst, and prevents our mistaking it for the transverse colon). (*b*) By percussion the dull sound will descend a few inches in inspiration, rising again in expiration. (*c*) With the hands placed flatly on the abdominal wall, no crepitus can be felt, which is present if any adhesive cords of lymph stretch from the cyst to the abdominal wall; audible crepitus is heard when the lymph-surfaces are recent (the fact that omentum may intervene between the cyst and the abdominal wall is not to be forgotten; its proximity to intestine, and the consequent resonance on percussion, and the softer and doughy feel, help to distinguish it). (*d*) 'The recumbent patient is directed to try and sit up without assisting herself by her hands or elbows. This effort puts the recti on the stretch, and if a tense ovarian cyst is free from adhesion, it falls backwards and to the sides, while the muscles form a projecting ridge in the centre of the abdomen.' Only when the adherent cyst is 'flaccid or partially empty' is this appearance seen. (*e*) The umbilicus moves with an adherent cyst. (*f*) By

placing the woman in the knee-elbow position, and examining the tumour through the vagina, if there are pelvic adhesions it does not yield to digital pressure, and the uterus may be pushed out of position or fixed. A portion of an ovarian cyst may occupy the pelvis and become fixed there, and still no adhesions exist. (*g*) If there have been recurrent attacks of peritonitis, with severe pain and uterine cramp, we may suspect that there are adhesions, or some twisting of the pedicle.

Inflammation and suppuration of the interior of the tumour may be suspected if there are rigors, rapid pulse, diarrhœa, hectic and elevation of temperature. Such inflammatory action may lead to rupture of the cyst and discharge of its contents into the abdominal cavity, or, as the consequence of adhesions, the cyst may empty itself through a fistulous opening through the abdominal wall or discharge itself by the vagina, bladder, uterus, or rectum. Death may occur ultimately from pyæmia or exhaustion.

Internal hæmorrhage into the interior of the cyst will be suspected if symptoms of intense shock set in suddenly with collapse.

I have thus very briefly summarized the most important and reliable signs and symptoms by means of which we are enabled to say: 1st, that the growth is ovarian; 2nd, that it is unilocular or multilocular; 3rd, that it is not malignant; 4th, that it is not a cyst of the parovarium; 5th, that there are or are not adhesions; 6th, that inflammatory changes have not occurred; 7th, that internal hæmorrhage is not going on into the cyst. For further information on this subject, I must refer my readers to the works already alluded to.

Differentiation of Unilocular, Multilocular, Parovarian, and Malignant Cysts.

UNILOCULAR CYST.	MULTILOCULAR CYST.	PAROVARIAN CYST.	MALIGNANT CYST.
Surface smooth.	Surface irregular and lobular.	Occurs in very young persons.	Occurs more frequently after forty.
Fluctuation free in all directions.	Fluctuation circumscribed and interrupted.	Is comparatively rare.	Nodular and irregular.
Growth not so rapid.	Growth rapid.	Fluctuation very superficial, and walls of cyst very thin.	Grows rapidly.
Contains the usual ovarian fluid.	Contains often blood corpuscles, and the fluid is denser and perhaps discoloured.		Solid contents, or is solid.
Circumferential measurement below umbilicus 35—45 inches (Peaslee).	Circumferential measurement below umbilicus 55—78 inches (Peaslee).		
Adhesions not common.	Adhesions common.		Glands involved.
General health not so rapidly involved.	Rapidly fails.	Does not affect the general health much.	Emaciation and cachexia come on quickly.
			Pain is present, especially at night.
If tapped the tumour is emptied, and quickly refills.	On tapping we do not empty the tumour.	Does not usually refill after tapping.	Ascitic fluid surrounds the tumour, and on examination the 'proliferating cell' of Fowlis is detected in the fluid examined.

It is seldom that the careful diagnostician, proceeding step by step in the examination of a case, will fall into error. Keeping clearly in his mind the possible pitfalls always open for hasty conclusions, he must check one test by the application of another, and deliberately balance probabilities. Should he be in doubt as between any two decisions, he will carefully apply all the facts of the case to each separately, comparing critically the weight of evidence which inclines him one way or other. The practitioner has to remember that such conditions as pregnancy, encysted dropsy, ascites, fibro-cystic disease of the uterus, extra-uterine fœtation, hydramnios, have deceived the most experienced living authorities. Therefore he will hurriedly express no opinion either to patient or friends; nor indeed will he commit himself to any final opinion, in case of doubt, to any consultant, or in sending a case to hospital. The case is one of 'abdominal' or 'pelvic' tumour until such time as its nature is clearly defined. Should any uncertainty remain, it is better to leave the question an open one. This is the more necessary, as in many instances he may not have the means or opportunity of applying such crucial tests as aspiration, paracentesis, the microscope, and chemical analysis. And one caution more I may add here. Even when the fact of the existence of an ovarian cyst is decided, we have to recollect that complications may exist, such as pregnancy, ascites, inflammatory conditions of the pelvic, or general peritoneum, malignant disease, uterine tumour, cysts of the abdominal viscera, etc. There may be two ovarian tumours; one may escape detection. (Should the two ovaries be involved, there is generally a double tumour and a well-marked sulcus between.) Before we finally express any decided opinion, it is well to exclude the possibility of any complication, as, through it, the case afterwards may assume much more serious proportions, and there may

be the reflection on the part of the patient that it escaped detection.

Treatment.

This practically resolves itself into—

General.
Palliative.
Removal of the cyst.

It would be sheer waste of time to discuss the general treatment of ovarian tumours by drugs. We may maintain the general health and support the patient's strength by suitable tonics and the administration of proper nourishment, while we see that sufficient time is spent in the open air and the mind is as far as possible prevented from dwelling on the malady and the chances of recovery. The bowels generally require attention, and the bladder may have to be relieved in consequence of pressure; any secondary changes in the cyst, or such an accident as hæmorrhage, must be dealt with as they occur. The one treatment for ovarian tumour, with rare exceptions, is ovariotomy. I have already referred to the operation of paracentesis abdominis and the methods of performing it, and vaginal paracentesis.

On the disputed question of tapping, Sir Spencer Wells, from the results of 265 cases in which tapping was practised, draws the conclusion: 'the mortality of ovariotomy is but little affected by tapping;' 'in some of the patients who have been tapped most frequently, there were no adhesions, while there were firm adhesions on those who had never been tapped.' He distinctly places before us these propositions:

'1. That in cases of simple ovarian, or extra-ovarian cysts, it is right to try the effect of one tapping before advising a patient to undergo a more serious risk. But in

compound or multilocular cysts, the third proposition holds good.

'2. That one or many tappings do not increase considerably the mortality of ovariotomy.

'3. That tapping may sometimes be a useful prelude to ovariotomy, either as a means of gaining time for a patient's general health to recover, clearing the urine of its load of albumen with which it is sometimes charged under the mere influence of pressure, or of lessening shock by relieving her of the fluid a few hours or days before removing the solid portion of an ovarian cyst; and

'4. That when the syphon-trocar (Spencer Wells's) is carefully used, in such a manner as to prevent the escape of ovarian fluid into the peritoneal cavity, and the entrance of air or of putrefactive material into the cyst, the danger of tapping is extremely small.'

Tapping through the rectum is a step we need not consider; and all other means, such as injection of iodine, and the formation of a permanent opening in the cyst, have been generally abandoned. Sir Spencer Wells still recommends the injection of iodine when, after tapping by the abdominal wall or elsewhere, inflammation has occurred, and the patient is suffering from the decomposing contents of the cyst. It is well to deodorize the fluid which escapes. This lessens the risk of pyæmia and septicæmia. A solution of one part of iodine and two of sulphurous acid to twenty of water, or of one part of sulphurous acid to eight of tepid water, is used. This is injected night and morning.

I omit in this work all reference to the operation of ovariotomy. Those who wish to study the steps of ovariotomy, and all the safeguards with which they must surround their patient in order to secure success, had far better read the accurate details of this operation and all the preliminary preparations in the work on 'Ovarian Tumours'

of Sir Spencer Wells. I shall only here remark, that the surgeon who is not familiar with the accidents and complications to be met with in the removal of large abdominal tumours, and whose manipulative skill is not seconded by the experience gained, both in seeing ovariotomy performed, and assisting at the operation, assumes a grave responsibility in operating from any written description, no matter how complete.

Certainly in no major operation of surgery is greater coolness, nerve, readiness of resource, decision, and frequently manipulative skill required than in the careful removal of *complicated* ovarian cysts. The operator who feels that he has *in himself* these qualities, may have no hesitation in operating. *He who does not, has no justification in attempting an operation frequently requiring all of them.*

Sir Spencer Wells's observations on the expediency of operating are worthy the attention of all surgeons:

'The question when surgical aid really is required, or how long a patient should be left to ordinary medical care, undisturbed by any medical treatment, is one which is daily occurring in practice; and the answer should be framed upon some such common-sense rules as the following. So long as the patient does not suffer much pain, is not annoyed by her size and appearance, has no great difficulty in locomotion, does not suffer from injurious pressure on the organs of the chest, abdomen, or pelvis; and so long as the heart and lungs, digestive organs, kidneys, bladder, and rectum perform their functions tolerably well, the idea of a surgical operation should seldom be entertained. And if we look only at the urgency of the present circumstances, nothing need be done. Life is not immediately threatened; and by watching the advancing symptoms, the moment for action can almost always be determined. But with the experience of the nine years which have elapsed since the

publication of my edition of 1872, I have become more and more disposed to advise the removal of an ovarian tumour as soon as its nature and connections can be clearly ascertained, and it is beginning in any way physically or mentally to do harm, since the risk of the operation under such circumstances is certainly less, and the possible evils of delay are eluded. Where, however, while the development continues, the symptoms follow their usual course, and the distress of the patient forces her to demand some kind of relief, there is either reluctance or refusal to face the liabilities of excision, or family considerations impose the necessity of delay, the size, nature, and connections of the tumour must guide us in the selection of one or other of the minor methods of palliative surgical treatment, which, though they seldom lead to a cure, have the advantage of enabling us to alleviate the most distressing symptoms, and to wait for an opportunity to try some of the greater expedients which have been from time to time adopted for the obliteration of these cysts, or to carry out the last resource of ovariotomy.'

CHAPTER XXIII.

SOME AFFECTIONS OF THE VAGINA.

*Vaginismus.**—'Vaginismus,' says Matthews Duncan, 'is a neurosis of motion, and it consists of spasm.' The muscles principally affected are the bulbo-cavernosi and the levator ani. But the entire muscular structures, voluntary and involuntary, appear to be involved in the spasm. There is a state of extreme irritability of the nerves supplying the vulvar orifice and the vagina.

Causation.

Hysteria.
Slight ulceration of the vulvar orifice.
Fissures.
Disproportion between the size of the penis and the vaginal orifice.
Caruncle of the urethra.
Chronic vaginitis.
Chronic endometritis.
Masturbation.
Incomplete intercourse.

It is frequently associated with

Amenorrhœa.
Dysmenorrhœa.
Uterine cervical catarrh.

* The student can obtain no more concise and complete description of the anatomy of the female perinæum and pelvic viscera than that given in the 'Manual of Gynecology,' of Messrs. Hart and Barbour.

Symptoms and Physical Signs.—The slightest touch, even with a feather, of the mucous membrane of the vulva, causes, in aggravated cases, pain and spasm. Examination with the finger is impossible. Sexual intercourse, at first painful, becomes ultimately intolerable, and all sexual desire is lost. A patient, a few years since, consulted me who gave the following history. She married six months previously, and never had proper connection. Her husband never had a complete erection. This led to frequently repeated and futile attempts at intercourse. Of late any attempt at coitus produced the greatest pain. On examination I found a catarrhal discharge pouring from the highly irritable and vascular vulva. The general health had also deteriorated. On further inquiry I detected in the husband a spinal lesion, which explained the impotence. This is but an example of similar cases that I have from time to time seen in which ineffectual and awkward intercourse has gradually produced the irritability of the vulvar muscles.

On examination of the external genitals we may discover in some exquisitely sensitive spot the source of the pain and dyspareunia. The margin of the hymen in married women may be hypertrophied. We may detect a fissure at the fourchette, some small ulcers about the hymen or near the urethral orifice, or an irritable caruncle of the urethra and general vascularity of the vulvar orifice. In any case of vaginismus where we cannot discover a local cause for the spasm in the vulva or vagina, a careful exploration of the rectum should be made. We may find the source of the affection in some ulcer, fissure, or hæmorrhoidal state of the rectum or anus.

Diagnosis.—This is easily made, and the history of the case is of itself sufficient to indicate the affection.

Treatment may be divided into general and local.

The General Treatment consists of:

Avoidance of intercourse.

Change of air.

Sea-bathing.

Warm alkaline baths of soda and starch; used with a speculum inserted into the vagina while in the bath.

Exercise. (Horse-exercise specially recommended.)

Tonics; mineral acids; bark.

Bromides, with valerian.

Bromide and valerianate of zinc.

Attention to diet, and avoidance of too stimulating a diet.

Local Treatment:

Warm vaginal injections—

Laudanum.

Chloral.

Liq. plumb. subacetatis.

Tobacco.

Suppositories—

Morphia (gr. i.).

Belladonna ext. (gr. ii.).

Iodoform (gr. v.).

Hyoscyamus ext. (gr. x.).

Ointments—

Belladonna (gr. xxx. ad ℥ii. of axungia)

Morphiæ (gr. v. ad ℥i.).

Atropia (gr. ii. ad ℥i.).

Iodoform with coumarin (gr. xx.—℥iv.).

Sims's vaginal dilator (this vaginal rest may be worn at night, and also for some time in the day. It can be retained in its place by a perinæal bandage).

Glycerine tampons may be worn at night.

The hot vaginal douche used night and morning, with alkaline, sedative, or astringent lotions added.

Applications—

Carbolic acid (gr. x. ad ʒi.).

Solution of nitrate of silver (gr. xx.—ʒi. ad ℥i., lightly pencilled to the sensitive parts).

Nitrate of silver (the fused stick lightly touched to the sensitive spots). (Fig. 68.)

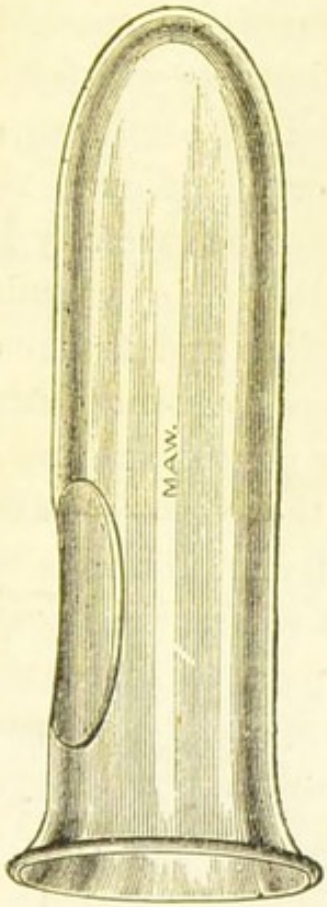


Fig. 184.—Sims's Vaginal Rest.

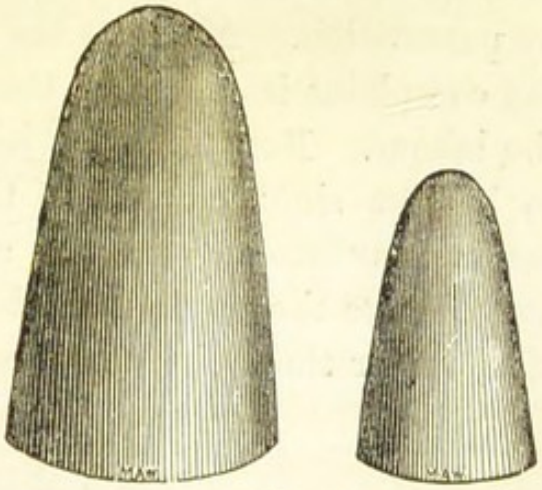


Fig. 185.—Vaginal Medicated Suppositories.

Operative Measures.—I have frequently done great service by the daily introduction of a diverging and conical Cusco's bivalve vaginal speculum with obturator, or Lane's speculum (p. 70) may be used. The patient having been anæsthetized (generally this step is required), the vulvar orifice is dilated with the thumbs, and the speculum is passed. This is then forcibly dilated and fixed by the screw. It is left thus for a few minutes. For a few days subsequently the speculum can be gently introduced and dilated. The vaginal rest may be

worn. *Sims's* operation consists in ablation of the hymen and incision of the perinæal body. The first step of the operation is performed with a curved scissors; the second with a scalpel, two incisions being made, one at either side of the mesial line of the perinæum, both meeting in the raphé. This operative procedure will seldom be found necessary if the other means of treatment are carefully carried out. Obviously, all special applications will fail if we do not recognise and treat any diseased condition of uterus, vagina, or vulva which causes or complicates the vaginismus. The state of the urine must be carefully inquired into, any uterine discharge attended to, any vascular urethral growths removed, small ulcerations and fissure of the vaginal orifice healed. These cases are frequently cured by parturition. At times the essentially neurotic nature of the complaint is shown by the return of the symptoms after the labour. But the proposition of Gaillard Thomas is not to be lost sight of, viz., in those cases where the marital act is impossible from the attendant pain, to thoroughly anæsthetize the woman, in the hope that complete connection, under these circumstances, may result in pregnancy.

Vaginitis.

The stress laid by Dr. Matthews Duncan on the division of vaginitis into constitutional and local is most important from a practical point of view. It is natural that, in his anxiety to cure this troublesome and often obstinate local disorder, the practitioner may overlook the constitutional state which is behind it. Few practitioners are there who cannot recall to mind cases of vaginitis which have resisted active local treatment, and in which some error of diet or disordered condition of the urinary organs has not explained the obstinacy of the inflammation. The rectifi-

cation of the constitutional error has been the first step towards the amelioration of the local irritation.

Varieties.—Vaginitis is :

Acute and Chronic.

Simple.
Granular.
Gonorrhœal.
Diphtheritic.

Causation.—In practice the first important point to decide is whether the vaginitis is a primary affection, or if it is secondary to either (*a*) any constitutional error, or (*b*) some local disorder in the uterus or bladder.

As a primary affection it may owe its origin to :

Exposure to cold.
Traumatic causes.
Violent coitus.
Pessaries.
Caustics and irritants.

Pathology.—The vaginal mucous membrane passes through the ordinary stages of inflammation ; increased vascularity ; congestion ; swelling ; at first, arrested, secondarily, increased secretion. This inflammatory state is attended by desquamation of the epithelium, and a secretion of mucus with pus. Frequently this stripping of the epithelium leads, with the irritation of accumulated acrid discharge, to ulceration. In patients whose general health is impaired, and who contract vaginitis through the irritation of purulent discharges from the uterus, membranes may form on the vaginal mucous surface, of a diphtheritic character. These same croupous membranes are found in connection with the exanthemata.

Symptoms.—Acute vaginitis reaches a climax in from eight to ten days. It commences with a sense of heat and burning in the vagina ; frequent desire to pass

water; mucopurulent or purulent discharge, which occasionally is fœtid; pelvic and perinæal vaginal pain or throbbing; scalding and smarting sensation on micturition; excoriation of the vulva.

Granular Vaginitis.

In this variety a 'granular' condition of the mucous membrane follows the acute inflammation. The papillæ are enlarged, the mucous follicles also are hypertrophied. It is more commonly associated with pregnancy; but I have several times seen a granular state of the vaginal mucous membrane where the inflammatory condition has arisen from gonorrhœal discharges, or where endometritis and cystitis have complicated the vaginitis.

Physical Signs and Symptoms.—If with the tubular speculum the vagina be cleaned out, and the walls wiped with cotton-wool, as it is withdrawn, so as to remove all discharge, the rugæ will be seen enlarged and the recto-vaginal and vesical septa swollen. The rough, eroded, granular, dark-red, and, here and there, fissured appearance of the mucous membrane is quite characteristic of this form of vaginitis. On wiping the surface of the membrane with a sponge or cotton-wool, in the earlier stages of the disease, we find that it bleeds readily. The os and external surface of the cervix uteri are frequently engorged and granular. There is considerable irritation; the patient awakes at night, disturbed by the itching, smarting, and heat. Pruritis of the vulva is often present to aggravate the other symptoms, and this is rendered more difficult to treat in consequence of the acrid discharge which comes from the vagina.

Gonorrhœal Vaginitis (Specific).

Few morbid conditions of the genital organs in a woman are attended with so serious and permanent consequences as

gonorrhœa. Despite every care in treatment, the latent virus may from time to time give rise to a variety of pelvic disorders; and when we least suspect it, the gonorrhœal taint is the source of some obstinate affection of the ovary, Fallopian tube, uterus, or pelvic peritoneum. It is not, then, so much on account of the immediate symptoms or distress that we have to regard gonorrhœa in the female as a serious affection, as the remote results which for years after the disease is contracted may continue at irregular intervals to cause uterine and other pelvic trouble.

Diagnosis.—This must depend on the history of the case; the examination of the husband; the intensity of the symptoms; the transmission to the male from intercourse. It is necessary to lay special stress on the extreme care with which, should we suspect gonorrhœa in a married woman, we must investigate the case. Two facts have to be remembered in practice, which have a most important bearing on the subject:

1. Other discharges in the woman, than that of gonorrhœa, may originate blenorrhœal discharge in the male. This is more likely to occur in men of a gouty temperament, and who may have had some latent urethritis existing, of a specific or non-specific nature.

2. As we may have little to guide us save the intensity of the symptoms and the urethral complication, without other collateral and confirmatory proof, sufficient to warrant a practitioner in coming to a conclusion, we must be more than ordinarily cautious in expressing an opinion that this disease is specific.

It is easy at all times to judiciously frame an excuse for seeing either the husband or wife. And this can be done without letting either see that we suspect the disease is anything more than an ordinary attack of inflammation. This must depend on the tact and discretion of the practitioner.

Guérin explains the fact, well known in practice, that women who are apparently healthy, and who may fancy themselves to be so, often convey infection by the localization of the disease in the upper part of the vagina and the vaginal cul de sac.

Symptoms and Physical Signs.—Every symptom of simple vaginitis is exaggerated; onset of attack more severe; discharge more profuse and purulent; local signs of inflammation intensified; greater scalding on passing urine; greater swelling of the vulva, and it may be excoriation; more frequent tinging of the discharge with blood.

Some affections to which gonorrhœa may give rise:

Vulvitis and vulvar abscess.
Cystitis.
Metritis.
Endometritis (cervical and corporeal).
Salpingitis.
Ovaritis.
Parametritis.
Perimetritis.
Sterility.
Bubo.

Treatment of Simple Vaginitis.—Acute stages. Rest in bed; warm baths; vaginal injections containing biborate of soda, Condy's fluid (℥i.—0i.), laudanum, decoction of poppy-heads, belladonna (such warm injections are to be used gently and slowly, not more than a pint at a time). The speculum may be used in the warm sit-bath, to which some carbonate of soda and starch have been added, and this can be repeated three times in the day. The warm vaginal douche, given with a Hayes tube, will be found to afford great relief; the nurse or the patient herself can be taught how to secure some wool either on a uterine probe or specu-

lum forceps, and having smeared it well with some sedative ointment of morphia or belladonna, to apply it to the vaginal mucous membrane after the bath or injection. At night a medicated tampon of glycerine with belladonna or hyoscyamus may be used. This can be applied the last thing before going to sleep, and removed in the early morning. Sleep may be secured by bromide of potassium and chloral, a preparation of opium or the use of a morphia suppository in the rectum. The bowel must be kept free with a saline purgative. The diet should be non-stimulating, and alcohol had better be altogether abstained from. If there be urethritis and vesical irritation, the oil of cubebs, copaiba, santal, prescribed with emulsion of almonds, and in combination with the liquor potassæ and tincture of hyoscyamus, will be found of service. The infusions of juniper, uva ursi, and buchu may be taken. Diluent drinks, and infusion of linseed should be given. When the acute stage has passed, astringent lotions of sulpho-carbolate of zinc, sulphate of zinc, subacetate of lead, alum, boracic acid, salicylic acid, tannic acid, matico, can be used. The warm douche should be continued, and the same sedatives used to allay irritation. Vaginal suppositories of belladonna, tannic acid, acetate of lead, iodoform, may be worn at night. Any uterine complication should be attended to. If there be a fistulous opening into the vagina this should be closed. Should the disease prove obstinate, the vagina may be mopped out through a cylindrical speculum with a nitrate of silver solution or carbolic acid and glycerine. Dr. Edis speaks highly of carbolic acid (℥ii.—℥iv. ad ℥i. glycerine) in case of granular vaginitis. I have found excellent results from the use of chloride of zinc (grs. xxx. ad ℥i. glycerine). The vagina is first wiped dry, and all discharge is removed. Having so done, I prefer to pack the vagina with a tampon of dry absorbent cotton-wool. This is left in the passage for a few minutes,

and then withdrawn. The vaginal walls are thus completely dried. A Fergusson's speculum is now introduced, and the entire vaginal surface is swabbed with any solution we wish to use, as it is being withdrawn. It is not necessary, save in rare and obstinate cases, to use so powerful a solution as the above, or the strong nitrate of silver one recommended by some (ʒii. ad ℥i. aquæ). On the whole, save in very exceptional cases, I think practitioners will do well to abstain from strong and heroic remedies in vaginitis. Sims's glass vaginal rest will be found a useful aid in dealing with vaginitis.

Gonorrhœal Vaginitis.

There are some precautions which it is right to insist that the practitioner should specially observe in this form of vaginitis :

1. In the acute stage avoid any forcible injections ; use simple soothing baths (Lawson Tait).

2. Before employing the astringent washes let the acute stage completely subside.

3. Keep the patient under observation for some time after the disease is apparently cured.

4. Remember the chronic and relapsing nature of the affection ; the liability of the patient to attacks of endometritis and ovaritis for a considerable time, and the latent character of the gonorrhœal virus.

CHAPTER XXIV.

ATRESIA OF UTERUS AND VAGINA.

PARTIAL or complete closure of the uterine or vaginal canals or of the vulvar orifice may exist, either as a congenital malformation or an acquired condition. Partial closure of the uterine canal we are familiar with as 'stenosis.' Complete artesia of the uterus may be the result of closure either of the external or internal os. If there is closure of the external os uteri the entire uterus is generally distended, the walls being either hypertrophied or, on the other hand, considerably thinned (Scanzoni). If the internal os be closed, the cavity of the body is dilated.

Causation.—1. Congenital. Various forms of *malformation of the genital canal* may exist, as double uterus with imperforate hymen at one side, or an absence of the vagina, or the double uterus has one horn closed and there is a single vagina; and other malformations and complications may occur. 2. Acquired.

The causes producing acquired atresia are:

Parturition.
The use of caustics.
Operations on the cervix.
Cervical endometritis.
Senile atrophy.

Physical Signs of Atresia of the Uterus:

Absence of menstruation.
Presence of a tumour in the hypogastrium.

A uterine tumour felt through vagina, which gives a sensation of elasticity.

Impossibility of passing the uterine sound.

Symptoms.—The symptoms will be those which we have already considered as resulting from absence of menstruation. Also, the patient suffers from the consequences of the occlusion of the genital canal and the local accumulation of blood. These consequences, immediate and remote (in cervical atresia), are :

Accumulation of blood in the uterus—hæmatometra.

" " " Fallopian tube—hæmatosalpinx.

Accumulation of serum in the uterus—hydrometra.

Perimetritis.

Pelvic hæmatocele.

Vicarious hæmorrhage.

Rupture of the uterus or Fallopian tube—septicæmia.

Atresia of the Vagina.—This condition is either *congenital* or *acquired.* In congenital atresia there is arrest of development leading to complete or partial absence of the vagina. The hymen may be imperforate. The urethra may take the place of the vaginal canal, the os uteri opening into it.

The causes of *acquired* atresia are :

Parturition.
Injuries, burns, etc.
Syphilitic ulceration.
Caustics.

Physical Signs :

Absence of menstruation after puberty.
Impossibility of copulation.
Absence of the vaginal canal.
Cicatricial adhesions in the vagina.
Imperforate or persistent hymen.

Bulging of the hymen.
Fluctuating tumour detected per rectum.
Presence of uterus ascertained by the recto-vesical examination.
Enlargement of the abdomen.
In the case of double vagina, there may be atresia of one vaginal canal, the other being permeable; a longitudinal vaginal tumour which is 'tense and fluctuating,' felt through the permeable vagina, and cylindrical in shape (atresia vagina, Schroeder).

Symptoms (after puberty):

Periodical pain and tenderness in the hypogastric region.
Uterine colic.
Vesical irritation.
Retention of urine.
Abdominal tenderness.
Constitutional symptoms of amenorrhœa.
Vicarious hæmorrhage.

Symptoms of Inflammation and Hæmorrhage from Retained Menses.

Rapid pulse.
Cold skin.
Vomiting.
Rigors.
Violent abdominal and uterine pain.
Elevation of temperature.
Symptoms of hæmatocele.
Perimetritis.

The principal dangers to apprehend are:

Peritonitis.
Hæmatocele.
Septicæmia.

The retained blood is:

Dark coloured;

Of the consistence of treacle; has no coagula.

Atresia of the Vulva, congenital or acquired.—Congenital malformation of the vulva may accompany hypospadias (absence of urethra) and other congenital anomalies of the genital organs. The vulva may, in very rare cases, be entirely absent, or it may permanently retain its infantile form. The labia majora or the nymphæ may be adherent, and, occasionally, the former are so adherent posteriorly as to give the appearance of an enlarged perinæum. The vulvar orifice is occasionally closed from the same causes that produce atresia of the vagina.

Treatment.—This depends on the seat of the occlusion. Operative interference may be demanded: 1. To set free the imprisoned menstrual fluid; 2. To permit of sexual intercourse. In all operations two principal dangers which have to be feared are:

(*a*) The admission of air, and septic changes in the fluid.

(*b*) The occurrence of uterine contractions, which may cause a retro-flow of the fluid through the Fallopian tubes.

To avoid the first danger, every antiseptic precaution, both before, during, and after the operation, should be taken to prevent the occurrence of septicæmia. The aspirator should be used to draw off the fluid. To prevent the second complication, it is better to draw off the fluid gradually, a very small needle of the aspirator, already recommended, being used. If the uterus is distended with fluid, and the atresia situated in the cervical canal, not more than one-third (Thomas) of the fluid should be drawn off on the first occasion. A week may be allowed to elapse before a repetition of aspiration; and this careful emptying of the uterus is continued until the entire fluid is removed. The vagina must be well tamponed after each operation.

The operation for opening the canal of the uterus, practised by Thomas, he performs under a fine carbolized spray, and he thus describes the steps: 'The cervix is steadied with a tenaculum, and a long exploring needle is passed into the uterine cavity. The sense of resistance once over, the escape of a drop of blood will assure the operator of his success in reaching it. Then putting into the gutter of the needle a delicate tenotome, he pushes it upwards to the required distance to open the canal. This section is repeated on the other three sides; the cavity of the uterus is syringed out with carbolized water, very gently forced from a small syringe; a glass plug is inserted in the cervix, and the vagina tamponed as after aspiration.'

Operation for Closure of the Vagina.—For a complete description of the operations of Amussat and Dupuytren the reader must refer to the larger works on Gynecology. In that of the former the steps are as follows: (1) A catheter is introduced into the bladder, and held by an assistant, and the finger of the left hand is carried into the rectum; (2) a transverse incision is made through the integument, between the rectum and urethra; (3) the handle of the knife and the finger are used to tear open a passage to the tumour; (4) the tumour is opened with a trocar and cannula, a director is introduced through the cannula, and the latter is withdrawn; (5) a knife is used on the director to enlarge the opening. In Dupuytren's operation, an incision is made in the first instance transversely. With the finger and knife-handle, the tissues are then torn through until the tumour is reached. A trocar is plunged into it, and the fluid evacuated. By means of a perforated sound the opening is enlarged, and the cavity is then washed out, by means of a catheter, with some warm antiseptic water. The best method of operating in the case of imperforate hymen, and the precautions to be taken in per-

forming either aspiration or crucial incision, have already been referred to. In adhesion of the vulva, in infants or very young children, the deformity can generally be rectified by means of the combined use of the knife and fingers.

Urinary Fistula.

It is not my intention to discuss in this work the surgical treatment of urinary fistula. In all surgical text-books these operations are described, and most fully in the larger gynecological works already referred to.

I shall simply devote a few words to the varieties of fistula and their causes.

Varieties:

Vesico-vaginal fistula.
Urethro-vaginal fistula.
Vesico-utero-vaginal fistula.
Vesico-uterine fistula.
Recto-vaginal fistula.
Perineo-vaginal fistula.

Other varieties are described, as above, uretero-vaginal, uretero-uterine, peritoneo-vaginal (Thomas). The names of these fistulæ indicate the organs involved.

Causation:

Parturition; the use of instruments, protracted labour.
Vaginitis.
Traumatic causes.
Phagedæna.
Syphilis.
Cancer.
Stone in the bladder.

Symptoms and Physical Signs.—The urgency of the symptoms will to a great extent depend on the size and position of the fistula. But the principal symptoms are the involun-

tary passage of water or fæces by the vagina, and the excoriation of the skin and soft parts in consequence of this discharge. The fistulous opening is generally easily dis-



FIG. 186.—Improved Urinal of Messrs. Matthews.

covered with a Sims's speculum. Those fistulæ are the most difficult to detect which are very small or slit-like, and which are situated at the summit of the vaginal canal.

A minute fistula may be concealed by a vaginal fold; and

it frequently requires very careful searching and cleansing with probe, hook, and cotton-wool to detect a small fistulous orifice. At times it may be necessary, in order to detect the orifice of the fistula, to inject the bladder with some coloured solution, as indigo, cochineal, etc. It is best, if in doubt, to place the woman in the knee-and-elbow position, and have the vaginal canal well exposed with Sims's speculum. Should any cicatricial bands contract the vagina, or there be any atresic state of the genital tract, the diagnosis may be still *more* difficult.

The dependence of vulvitis and vaginitis on the presence of urinary fistula is not to be forgotten. Not long since, in my practice, the obstinacy of a case of vaginitis was explained by the detection of a small fistulous opening, situated at the junction of the vagina and cervix.

Prolapse of the Vagina.

In discussing prolapse of the uterus and elongation of the cervix, it was necessary to refer to vaginal prolapse. The student has, however, to consider it as an independent affection, which may exist apart from any descent of the uterus. When the vaginal protrusion occurs as a primary affection, it is more likely to lead through traction to supra-vaginal elongation of the cervix than to prolapsus uteri. On the other hand, the three conditions, prolapse of the uterus, elongation of the cervix, and vaginal inversion, are frequently associated.

Causation (*vide* 'Prolapse of the Uterus'):

Old age.
Chronic vaginitis.
Operation.
Parturition.
Habitual neglect of the bladder and rectum.

Pathological Anatomy.—The relaxed anterior or posterior wall of the vagina, more frequently the former, protrudes into the vaginal canal, and drags with it, in its gradual descent, the bladder (cystocele), or the rectum (rectocele); an ovarian cyst may occupy the posterior pouch (ovariocele). The bladder, or rectum, may thus be carried down with the vagina; the former descending between the labia, the latter pushing the posterior wall of the vagina forwards, and finally effacing the perinæum, which merges into the prolapse. The orifice of the urethra may be visible on the anterior surface of the prolapsed mass; and the catheter must be passed in a downward direction to reach the cavity of the bladder. Small intestines may occupy Douglas's pouch, which is displaced downwards. Fœtid urine is apt to accumulate in the bladder, and fæces and gas in the bowel.

Symptoms and Physical Signs.—The student may refer to the chapter on 'Prolapsus Uteri' for the symptoms of prolapse of the vagina. The characteristic condition may be found in some old patient who has borne several children. There is a sense of bearing down; some vesical irritation with incontinence of urine; the bowel is constipated. On examination, the anterior wall, generally, (from the shape of the vaginal canal) is found protruding into the vagina, and forming here a soft tumour. If the prolapse has lasted for any time, the tumour protrudes in front of the labia. The uterus is found by the digital and combined examination to be in its normal position, or perhaps somewhat lower in the pelvis. The catheter will detect cystocele, and the finger a rectocele.

For the treatment, the student must read the chapter on 'Prolapse of the Uterus.'

Cystic Tumours.

Cystic tumours are occasionally met with in the vagina. Practitioners must be careful not to confound such cysts with :

Hernia.
Cold abscess.
Varix.
Cystocele.

These cysts are generally single. They are painless. They give rise to little inconvenience, unless they are inflamed. Pressure does not affect the cyst as it would a hernial protrusion. If in doubt as to the nature of the cyst, a fine exploring needle may be used. The cyst generally contains a clear, glairy fluid. The treatment consists in evacuation of the contents, and removal of portion of the cyst-wall (Duncan). The cavity can be treated with carbolic acid. If *sarcomatous tumours* are met with in the vagina they must be treated like polypi elsewhere, and removed by the écraseur. Should *epithelioma* attack the vagina, it must be dealt with on the general principles recommended for the treatment of cancer of the womb.

CHAPTER XXV.

AFFECTIONS OF THE VULVA.

Hypertrophy of nymphæ and clitoris :
- Hyperæsthesia (Thomas).

Cutaneous eruptions :
- Erythema.
- Erysipelas.
- Eczema.
- Herpes.
- Prurigo.
- Lichen.
- Acne.

Lupus (rodent ulcer).

Syphilis :
- Primary sores.
- Secondary syphilides.
- Condylomata.

Vulvitis :
- Simple.
- Purulent.
- Phlegmonoid.
- Specific.
- Follicular.
- Phlegmonoid inflammation of the labia majora.
- Abscess.
- Gangrene (noma).

Vegetation.
Cysts.
Varix.

Hæmatoma (hæmatocele and thrombus, wrongly called).
Pudendal hæmorrhage.
Tumours :
Pedunculated.
Sessile.
Neuromatous.
Sebaceous.
Fibrous.
Lipomatous.
Sarcomatous.
Cancer :
Medullary.
Epithelioma.
Melanotic.
Hernia of ovary.
,, intestine.
Hydrocele.
Pruritus

Hyperæsthesia.—Gaillard Thomas has drawn special attention to this painful condition. I have seen a patient in whom I could detect not the least abrasion or vegetation or irritable caruncle, and yet the introduction of the finger between the labia caused exquisite pain. Hyperæsthesia may attend on irritable urethral caruncle, painful vegetations, or the red patches described by Lawson Tait, and is occasionally met with where we have other manifestations of hysteria. *The treatment* outlined by Dr. Thomas is that which I have found of the greatest service. This consists of: 1. Attention to the general health, restoratives and tonics. 2. The application of local sedatives and astringents; such as belladonna, opium, chloroform, iodoform,

tannin, and alum. There must be complete rest from coitus.

Cutaneous Eruptions.—Certain general principles must be observed in the treatment of these affections.

1. Attention to the diathesis or constitutional condition of the patient; for example, hysteria, gout, struma, diabetes, scorbutic states, abnormal states of the urinary organs, cystitis, phosphates and uric acid in the urine, syphilis.

2. Scrupulous cleanliness. Alkaline baths, local antiseptic washes of salicylic acid, boracic acid, carbolic acid. The soaps of thymol, eucalyptol, and chaulmaugra will be found useful.

3. The correction of any uterine, vaginal, or urethral affection, which, by an irritating discharge or otherwise, may sustain the affection of the vulva.

The remedies which will be found most useful, either as ointments or lotions, in cutaneous affections of the vulva, are:

Oxide of zinc (ointment or lotion).
Calamine (Corbyn's) (ointment or lotion).
Oxide of bismuth " "
Biborate of soda (lotion).
Carbonate of soda "
Acetate of lead (ointment or lotion).
Glycerole of lead (ointment).
Solution of the subacetate of lead (ointment or lotion).
Oleates of zinc or lead (ointment).
Sulpho-carbolate of zinc (lotion).
Thymol (lotion and ointment).
Chaulmaugra (ointment).
Camphor and starch (in powder).
Camphor and borax (in lotion).
Iodoform (ointment).

Special for Pruritus.

Chloroform (1 pt. to 7 of oil).
Pyroligneous oil of juniper (ointment).
Creosote (♏ x. ad ℥i.).
Hydrocyanic acid (♏ v.—℥i.; lotion or ointment).
Morphia (lotion or ointment).
Tobacco infusion (℥i.—0i.; lotion).
Hydrarg. chloridi (corrosive sublimate gr. ½—℥i.; lotion).
Cyanide of potassium (gr. iii.—℥i.; ointment).
Tar (ointment).
Decoction of walnut-leaves.
Chloral hydrate (lotion).
Belladonna (ointment or lotion).
Tannic acid ,, ,,
Hazeline (lotion).

Special Astringents and Stimulants.

Nitrate of silver (gr. xxx.—℥i. ad ℥i.).
Carbolic acid (gr. xxx.—℥i. ad ℥i., or equal parts of carbolic and glycerine).
Chromic acid (gr. xxx. ad ℥i.).
Chloride of zinc (gr. xxx.—℥i. ad ℥i.).

The use of any of these remedies, alone or in combination, will depend on the nature of the eruption, its stage, and the indication for a soothing, astringent, stimulating, or detergent application.

Syphilitic States.

Calomel wash.
Mild mercurial ointment.
Oleate of mercury, with morphia.

Local vapour baths of calomel.

A course at Aix-la-Chapelle.

Iodoform (ointment).

Where there is a raw or moist surface of the skin the lotion of zinc and calamine (Wilson) will be found most useful, viz. :

R. Zinci oxidi, ʒii.
Calamine (Corbyn's), ℥ss.
Glycerinæ, ℥ss.
Aquæ rosarum, ℥viiss. Ft. Lotio.

To which either carbolic acid, or thymol, or hydrocyanic acid may be added. This can be used with a fine sponge. The powder dries, and can be washed off before fresh lotion is applied.

When the inner surfaces of the labia or nymphæ are sore or swollen they should be separated by some emollient dressing—a piece of linen can be folded and placed between them, or some cotton-wool may be used. The linen or wool can be covered with any application we wish to employ.

Lupus—Rodent Ulcer.—This comparatively rare disease does not differ, save so far as it is influenced by the anatomical site in which it occurs, from the same disease elsewhere, and may (from the recent researches of Thin and Calcott Fox) be considered an epithelioma. The treatment is conducted on the same principles which determine us in the management of the lupoid and rodent ulceration occurring in other situations. If by the hard base and slow progress, tubercular appearance, and absence of pain, we are able to recognise the disease early and before ulceration has extended widely or deeply, we may prevent the spread of the growth by the knife and caustics, the most powerful of the latter being potassa fusa, chloride of zinc, nitric acid and the actual cautery.

Syphilis.—Syphilides must be treated on several prin-

ciples. In secondary syphilitic affections in women I know of no safer or better preparation of mercury than the bi-cyanide gives in combination with quinine in pill, as already advised. After its administration, iodide of potassium should be taken in full doses. Iodoform, when it can be borne, acts more quickly. Women suffering from specific affections require plenty of light and nourishing food, change of air, and a continuance of anti-syphilitic remedies for some time. Mercury, whether by vapour or inunction. should be administered with great care, and it is a good plan to omit its administration from time to time, never pushing its *therapeutical* effects to the limit of salivation. As local applications to syphilitic sores, to clean their surfaces and to encourage healing, both iodoform and iodide of starch (in the form of ointments) are excellent preparations.

Simple Vulvitis.—This affection is the result frequently of want of cleanliness, deficient food and exposure, violent coitus, pruritus and the consequent rubbing to allay the itching; in children it is produced from the same cause, occasioned by the irritation of threadworms. In simple vulvitis there is swelling, heat, irritation, and a leucorrhœal vulvar discharge of mucous, epithelium, and pus.

Purulent Vulvitis.—This is a much more serious form of inflammation. The preliminary symptoms are all intensified, and are followed by a copious discharge of pus. If the labia are separated the mucous membrane is found in parts excoriated or ulcerated, and in some instances patches of diphtheritic membrane are seen on the mucous surface.

Causation.—It is brought on by—

Want of cleanliness.
Traumatic causes.
Gonorrhœa.
Excessive venery.

It is associated with—

Vaginitis and vaginismus.
Pruritus.
Vulvar eruptions (as eczema).
Fissure of the vulva.
The exanthemata.

Symptoms.—Besides the ordinary symptoms of vulvitis there are frequently most severe pruritus, frequency of micturition, and scalding with an inflamed meatus urinarius. The discharge has an unpleasant odour. Cystitis may arise. The treatment must be conducted on the lines laid down for the cure of vaginitis both simple and specific: rest; fomentations; baths; warm opium and acetate of lead; poultices; mild astringent and sedative applications when the acute stage has passed; an emollient ointment applied and used to separate the nymphæ; later still, painting any raw surface with a mild nitrate of silver solution, and using antiseptic and stimulating lotions of carbolic acid, boracic acid, sulpho-carbolate of zinc, etc.

Follicular Inflammation.—In this variety of vulvitis, the various glands—muciparous, sebaceous, and others of the mucous membranes of the vulva—are swollen and inflamed.

Causes.—It is sometimes associated with the leucorrhœa of pregnancy; otherwise the causes operating in producing follicular vulvitis are much the same as those which induce simple vulvitis.

Symptoms and Signs.—The same itching and sense of burning heat, with extreme sensitiveness of the vulva, that are present in other forms of vulvitis, mark the presence of the follicular varieties. Both the muciparous follicles and the sebaceous glands can be detected enlarged; the former in patches, the latter as congested papillæ. A most important feature of this inflammation must be remembered

by the practitioner, viz., that it is liable to cause urethritis in the male, and thereby give rise to a suspicion of unchastity in the mind of a husband (Thomas).

Phlegmonous Inflammation of the Labia.—When from any cause we find that one labium has become enlarged, tense, hard, painful, and very tender, we may suspect phlegmonous inflammation. The effusion is generally followed by the formation of pus and an abscess. We must treat it on the general principles of relieving pain, promoting the formation of pus, its free evacuation, and the use of disinfectants. Care must be exercised not to mistake phlegmonous inflammation for a hernia or pudendal hæmatocele. That an ovary may be displaced into the vulva, we have seen. We must not commit the pardonable error of mistaking such an inflamed ovary for phlegmon. The presence of a circumscribed tumour in either labium, which becomes periodically sensitive and very painful—this increase of sensitiveness corresponding with the menstrual periods—should be sufficient to remind us that an ovary may find its way into the labium.

Abscess of the Vulva-Vaginal Glands.—This affection of the vulva and its treatment has already been incidentally alluded to (page 3). The position of the tense, hard, painful swelling, frequently attended by a certain degree of vulvitis, and its sudden advent, should be sufficient to indicate the nature of the inflammation.

Gangrene—Noma.—This serious affection is not, fortunately, of frequent occurrence. Yet I have seen one instance in which death occurred, not so much from the ravages made by the local gangrene as the cachectic weakened state of the child. I have never seen it occur in women. The predisposing causes are such as we find producing low and unhealthy types of inflammation elsewhere in the body, notably cancrum oris, and those sloughing ecthymatous sores

frequently seen in impoverished and dirty children. If not checked, the course of disease is that of unhealthy ulceration when attended by mortification generally.

The *treatment* consists in generous support of the child, and such disinfectants and antiseptics, applied locally, as carbolic acid, chloride of zinc, iodoform, Condy's fluid. Poultices had better be avoided. If any are used, those of charcoal, and yeast with nitric acid, are perhaps the best. The usual means adopted to prevent the spread of mortification must be had resort to in this case, as the application of nitric acid, pure carbolic acid, and the actual cautery.

Warts and Vegetations.—These growths occur in different situations about the vulvar orifice. They are frequently the result of gonorrhœa or syphilis. This, however, is by no means the rule. I have had a young patient, a virgin, under my care, suffering from leucorrhœal discharge and two pretty large vegetations growing from the neighbourhood of the clitoris. These growths should be removed by the scissors. It is a good plan, if the wart is of large size, to apply a ligature to its base or pedicle a few days before removal. We thus avoid the chance of much hæmorrhage, which otherwise may be inconvenient. Such warts should never be cut off carelessly without means at hand to restrain the bleeding which may follow. I have destroyed these vegetations without any cutting operation, by means of the repeated and careful application of acid nitrate of mercury, chromic acid or glacial acetic acid. In more aggravated cases it may be necessary to apply the actual (Paquelin's) cautery after the removal of the growth with a cutting instrument.

Syphilitic vegetations may be treated by such local specific means as the dusting of calomel powder, the use of the black or yellow mercurial wash, the mild mercurial or oleate of mercury ointments.

Cysts of the Labia are comparatively rare (cyst of the vulvo-vaginal gland has been referred to, page 3). They must be treated on the same plan as that recommended for the destruction of vaginal cysts.

Varix of the Pudendal Veins is generally the result of pregnancy. The danger is rupture of a vessel and serious hæmorrhage. A suitable air-pad support will be found useful in these cases. If hæmorrhage should occur, the usual means must be taken to control it.

Pudendal Hæmatoma (wrongly called thrombus).—Pudendal hæmorrhage. Blood may pour in quantity from the labia in consequence of puncture or laceration of the veins of the vestibule. Or it may accumulate in the cellular tissue of the labium. This accident is one which may occur during parturition. Independently of pregnancy, it may follow from traumatic causes or violent muscular efforts. The sudden appearance of a swelling in either labium, following the injury or strain, and the sense of throbbing and pain which generally succeeds, are in themselves sufficient to indicate what the nature of the accident is. However, cases occur in which the attention is first attracted by the presence of a tumour, and the obstruction it causes to micturition or coitus.

Treatment.—If the vulva is bleeding from a wound, a tampon must be placed in the vagina, and a firm compress with a T-bandage secured externally. This may be made to include a small ice-bag. A saturated solution of alum may be kept to the bleeding part. An acupressure pin or a silver suture can be passed from the cutaneous to the mucous surface, so as to compress the bleeding vessels (Goodell). If the blood is effused ('hæmatoma') into the cellular tissue, and a tumour forms in the labium, it may be (1) absorbed, or (2) remain in a liquid state, or (3) suppuration may occur. Rest, pressure, and cold will generally

favour absorption. Should this not happen, and inflammation and suppuration follow, the pus must be evacuated, and any coagula removed, by an incision made from the mucous surface, with every antiseptic precaution.

Tumours are found growing from the labium, nymphæ, hymen, and clitoris. They are readily removed with knife, scissors, or écraseur.

Hernia of either the ovary or intestine may occur into the labium. Its descent by the unobliterated canal of Nuck is analogous to the corresponding descent of the intestine in inguinal hernia in the male. The bowel can generally be reduced in the recumbent posture by taxis, but it may become strangulated. The possibility of this accident must be remembered by the surgeon before he takes up a lancet to open an assumed abscess or cyst of the labium.

Hydrocele, or an accumulation of fluid in the canal of Nuck, is of such rare occurrence, that we need not here consider its pathology in detail. It may be sacculated if the abdominal opening of the canal is closed; otherwise this fluid can be pressed out of its sac. It is well, however, to remember the possibility of such a condition existing.

Cancer of the Labium must be treated on general principles. If superficial, it is better to remove the mass with the knife and use the actual cautery to the raw surface. Hæmorrhage is always to be dreaded. Powerful styptics or the actual cautery, and a firm compress applied with a bandage, will be necessary. But despite all our efforts, in advanced cases, fatal bleeding may result.

Pruritus Vulvæ—Itching of the Vulva.—It is questionable if the practitioner does not often fall into error in the treatment of pruritus vulvæ, from regarding it as a primary disease rather than as a secondary affection of the vulva. I confess that, individually, I do not look on pruritus as a primary condition, but as a neurosis, secondary to some

constitutional error of nutrition, or local disease in any part of the genital tract. The danger lies in the mistake of treating a symptom and neglecting the disease which is the cause of its appearance. We may thus divide the causes of pruritus into constitutional and local.

Constitutional: Gout.
Diabetes.
Syphilis.
Exanthemata.
The menopause.
Pregnancy.
Senile changes.
Hysteria.
Bright's disease.
Alcoholism.
Gastric and hepatic derangements.

Of these, diabetes, alcohol, pregnancy, syphilis, and gastric derangements are the most frequent.

Local: The cutaneous affections.
Eczema.
Prurigo.
Lichen.
Leucorrhœal discharges.
Gonorrhœal ,,
Flow of diabetic urine.
Cystitis.
Vulvitis.
Vaginitis.
Ascarides.
Pediculi.
Vegetations.
Urinary fistulæ.
Hæmorrhoids.
Dirt.

The peculiarly nervous nature of this affection is shown by the total absence of all organic change in the skin in some cases; in a great many instances the excoriation and accompanying eruption are secondary consequences of some irritating discharge, or the tearing of the skin by the nail in scratching. It is distinctly in most cases a reflex neurosis. The remote source of the irritation is in the stomach, liver, or rectum.

General Treatment.—The treatment will necessarily be divided into general and local. The practitioner, on first seeing the case of pruritus, should inquire carefully into the origin and history of the disease. His success in overcoming the obstinate, and at times intractable, itching will depend on the discovery of the cause, whether constitutional or local, which has brought on the pruritus. Gouty and diabetic states must be dealt with according to general principles, both therapeutical and dietetic; the character of the urine ascertained, and any abnormal condition of this secretion rectified as far as possible. Alcohol, according to circumstances, should either altogether be forbidden or taken in the most moderate quantity. All stimulating diet should be avoided. Those articles of diet enumerated in the subjoined list are, as a rule, hurtful to dyspeptics, and create acidity:

Hot and heavy soups.
Sauces.
Pickles.
Spices.
Pastries.
Jam.
Potted and preserved meats and fish.
Potted and preserved fruits.
Cheese.
Much butter.

Cream.
Fats.
Saccharine vegetables.
Much potato.
Rhubarb tart.
Raw vegetables (salad and watercress, exceptions).
Raw celery.
Such saccharine fruits as grapes, pears, plums.
Pork.
Veal.
Salted meats.
Over-boiled meat.
Lobster.
Crab.
Hard-boiled egg.
Fresh bread.
Hot buttered toast.
Cider.
Sherry.
Port.
Liqueurs and effervescing wines.
Beer.
Stout.
Strong tea and coffee.

Excess of meat for gouty organs is as bad as excess of alcohol.

In hepatic derangement, the administration, a few times in the week, of a mild mercurial preparation in combination with a vegetable cholagogue, followed by the administration of a saline, such as Friedrichshall, Pullna, Hunyadi Janos, will be of service. Such spas as those at Vals, Vichy, Ems, Homburg, Carlsbad, Kissingen, St. Galmier, Schwalbach, Aix-les-Bains, Harrogate, Bath, Cheltenham, can be recommended according to the temperament of the

individual. During pregnancy the patient may take suitable baths, and use such local remedies as those already indicated. The leucorrhœal discharge of pregnancy should be attended to. If there be constitutional syphilis, it must be dealt with by specific remedies, both general and local. Arsenic will be found of service in many cases.

The Local Treatment.—This may be divided into two heads : (1) The treatment of the local condition—uterine, vaginal, vulvar or vesical—which is the cause of the itching ; (2) the palliative treatment of the pruritus itself.

Much benefit will be derived, in some cases, from the use of soothing alkaline and starch baths. But to this there are exceptions ; and baths occasionally appear to do more harm than good.

The two baths I prefer are :

1. Bran (2 lb.), potato-starch (½ lb.), gelatine (1 lb.) ; water at 100°—105°, 25 to 30 gallons.

To this a few gallons of decoction of marsh-mallow may be added. The bran and marsh-mallow water can be first prepared, and added to the bath subsequently.

2. Carbonate of soda (℥ii.), hyposulphite of soda (℥ii.), potato-starch (℥iv.) ; water at 100°—105°, 25 to 30 gallons.

In ordering any *hot* bath for a female patient, the periods must be remembered, and their regularity inquired into. If there is suppression of the menstrual flow and accompanying head-symptoms, due to cerebral congestion, hot baths must be avoided. Such soaps as larch-soap (Dr. W. Moore of Dublin), which is composed of wheaten bran, glycerine, white curd soap, and extract of larch-bark ; sulpholine soap, or carbolic soap, may be used with the bath. A glycerine or medicated tampon, or pessary, can be introduced after the bath ; the vaginal rest may be worn, and the lips of the vulva separated by a piece of folded linen or cotton-wool,

smeared over with any sedative ointment, and kept in position by a light perinæal bandage or a napkin.

The local remedies which will be found most useful to allay *itching*, have been already enumerated. Those I attach most value to are:

Pyroligneous oil of juniper.
Chloroform.
Hydrocyanic acid.
Cyanide of potassium.
Bichloride of mercury.
Tobacco.
Belladonna.
The glyceroles.
Solution of subacetate of lead.
Chloral.
Walnut-leaves.
Morphia.

Some of these drugs must be used with caution if there be any abrasion of the skin. Many of them can be combined.

For the itching of diabetes Dr. Goodell strongly recommends the salicylate of soda, in 15-grain doses, every fourth hour (Dr. Simpson, Philadelphia). Bromides and chloral may have to be given to secure rest and sleep.

CHAPTER XXVI.

SOME URETHRAL AFFECTIONS.

THE affections of the female urethra are:

Congenital abnormalities.
Urethritis.
Prolapse of the urethra.
Fistulæ.
Stricture.
Angioma.
Vegetations.
Vascular caruncle.
Tumours.
Cancer.
Polypi.

Urethritis is generally the result of specific inflammation, though it may accompany other inflammatory states, both of the bladder and vulva. For the general treatment, the reader can refer to the chapter on vaginitis. If the urethra should remain inflamed and vascular, some astringent applications may have to be made to the mucous membrane, such as nitrate of silver.

Prolapse of the Urethra is very rarely met with. Care must be taken not to mistake the red and everted mucous membrane for a urethral growth. The prolapsed portion has to be removed either by knife, scissors, ligature, or gal-

vanic wire. Hæmorrhage has to be controlled by a tampon and T-bandage.

Fistulæ of the urethra must be closed by operation.

Both *venous angioma* and *vegetation* are differentiated from urethral caruncle by their want of sensitiveness.

Polypi are readily removed.

Urethral Caruncle.

Situation and Nature.—This most painful growth is found at the orifice of the meatus. It consists of a mass of hypertrophied papillæ, freely supplied with bloodvessels and nerves. The papillæ are surrounded by connective-tissue, and are covered by squamous epithelium.

Symptoms and Physical Signs.—The patient generally consults us for great pain and frequency in passing water; this at times amounts to excruciating agony. She has to avoid coitus, and if the case be an aggravated one there is pain in walking, and the slightest movement causes distress. The woman's suffering is written on her countenance. She is anxious, depressed, nervous, and hysterical. On making an examination, the cause of the suffering is at once apparent in the little raspberry-red growth or growths which are seen, either sprouting from or occluding the urethral orifice. These may be very small (the largest I have seen has not exceeded in size a small bean), or they may grow to the size of a pigeon's egg. The characteristic feature of the affection is at once demonstrated by the intense pain on touching the growth, even with a little cotton-wool rolled on a probe. When incompletely anæsthetized the woman will still wince if the tumour be manipulated. Caruncle may occur at all periods of life, both in married and single. Dr. Goodell thinks that the pressure on the urethral veins during the arrest of the head in labour may

predispose to the occurrence. So may irritating discharges and habits of uncleanliness.

Prognosis.—The great tendency to recurrence should be remembered. This applies more to the sessile variety than to the pediculated. When multiple, if they are pedunculated, there is the best chance of complete cure.

Treatment.—There is but one satisfactory treatment for urethral caruncle; viz., removal by forceps and scissors, and the subsequent application of the actual (Paquelin's) cautery. We must be prepared for smart bleeding, which may have to be controlled by tampon and compress. If an operation will not be submitted to (which is exceptional), the topical application of such agents as carbolic acid, nitric acid, and chromic acid may be tried in order to deaden sensibility. Whether from urethral growths, or from extraneous pressure, or vesical irritation, there is incontinence of urine, with pain, the greatest relief will be found frequently to follow simple dilatation of the urethra. This can readily be effected in the manner already described.

CHAPTER XXVII.

COCCYGODYNIA.

By coccygodynia we understand a painful affection of the coccyx and perinæal structures, which principally shows itself in 'painful sitting' (Duncan), and pain in the act of defæcation. The structures involved are: the coccyx, the sacro-coccygeal ligaments, and the perinæal muscles attached to the coccyx:

Causation.

Traumatic { Blows, kicks, or falls on the coccyx.
Difficult parturition.
Instrumental delivery.

Horse exercise (Scanzoni, Goodell)
Hysterical temperament.
Rheumatism.
Uterine and ovarian disease.
Rectal disease.
Constant sitting.

I have, however, seen severe coccygodynia present in an unmarried woman in whom not one of the causes enumerated above could be traced. I had attended her some time previously for a severe attack of erysipelas of the face. From this she perfectly recovered. There was no rectal, uterine, or other local trouble. She was not, in the least, of an hysterical or nervous temperament. She had no

sedentary occupation, and had no horse-exercise. At first her sister came to consult me, telling me that the patient thought she suffered from internal piles, and was averse to seeking advice, but that the difficulty in sitting had become so great she could not come to meals, and she was anxious I should see her. The pain had come on gradually. The discomfort produced by examination of the rectum, or any pressure on the coccyx was inconsiderable, and yet she could not sit without great suffering. In this case, up to the time I last saw the patient, relief was afforded by sit-baths, counter-irritation over the coccyx, anodyne liniments, and suppositories, a rectal plug, which was worn at night, and the internal administration of bromide of potassium with nux vomica.

Treatment.—If palliative treatment does not cure the patient the subcutaneous division of the coccygeal ligamentous and muscular attachments may be proposed (Sir J. Simpson), or extirpation of the bone itself can be carried out (Nott). In deciding on any radical step, such as subcutaneous section or removal, we will be influenced chiefly by the decision as to the traumatic character of the affection; it is in those cases of partial dislocation or other injury of the bone that extirpation is especially indicated. The important practical rule to adopt in any case in which we are consulted for 'painful sitting' or symptoms of coccygodynia is to carefully exclude any uterine, vaginal, perinæal, or anal affection which might account for the pain, and the removal of which will often relieve all the distressing symptoms.

CHAPTER XXVIII.

STERILITY.

Congenital.

1. Absence of the ovaries.
   ,, ,, Fallopian tubes.
   Absence of the uterus.
   ,, ,, vagina.
2. Atresia of the Fallopian tubes.
   ,, ,, uterus.
   ,, ,, vagina.
3. Imperforate hymen.
4. Conoidal uterus, and stenosis of the os uteri or cervix.
5. Pinhole os uteri.

Acquired.

1. Strictured states of the Fallopian tubes.
   ,, ,, uterus.
   ,, ,, vagina.
2. Tumours obstructing the Fallopian tubes.
   ,, ,, uterus.
   ,, ,, vagina.
   ,, ,, vulva.
3. Displacements of the Fallopian tubes.
   ,, ,, uterus.
4. Inflammatory states of the genital tract—especially chronic endometritis.

5. Chronic metritis.
6. Disease of the ovaries.
7. Ovarian dysmenorrhœa.
8. Membranous dysmenorrhœa.
9. Menorrhagia.
10. Dyspareunia—painful intercourse from any cause.
11. Vaginitis and vaginismus.
12. Gonorrhœa and its consequences.
13. Syphilis (in the sense that it destroys the vitality of the ovum).

The treatment of sterility it is not necessary to enter on here. The reader will refer to the chapters in which each of the above-mentioned causes of sterility is discussed. Only one caution I think it well to give the young practitioner. I would say to him: 'Do not be led away by the miraculous cures of sterility you hear of, or the occasional success you may yourself meet with in rectifying some obstruction to impregnation, to hurriedly perform operations on the uterus with a view of "curing sterility." Bear in mind, in the first place, that failure will attend a large proportion of such operations. The patient should be frankly prepared for this. Remember also that serious consequences often follow these uterine operations, though we do not hear of them, and that barrenness has all its evils aggravated ten thousand times, when the miserable hypochondriac passes from hand to hand, the victim of delusive hopes and disappointing operations.' Far otherwise is it when some diseased or abnormal condition of the uterus exists which it is our duty to treat by operation, and the cure of which may bring about a possibility of impregnation. I do not mean to deprecate any justifiable and judicious interference with an otherwise healthful woman who happens to be barren, in order to bring about

conception. But I do mean to insist that the surgeon incurs a grave responsibility who operates on a woman otherwise in perfect health, as many barren women are, if there follow, either directly from the operation or indirectly from the results, dangerous or permanently serious consequences, even though she may accept every risk the operation entails.

Evidences of Constitutional Syphilis.

It may be well here to append this table of the principal signs and symptoms on which we rely as proofs of constitutional syphilis in a woman:

History of vulvar sores and discharges.
Abortions and miscarriages.
Glandular enlargements in the groins.
The presence of maculæ, papules, or roseola.
Symmetrical skin affections.
General discolouration of the skin.
White cicatrices and scars.
Symmetrical throat eruptions and ulcers.
Nasal and naso-pharyngeal affections.
Ozæna.
Iritis and retinitis.
Condylomata.
Stricture of rectum.
Gummæ, sores, fissures, and ulcers of the tongue.
Syphilitic vegetations.
Headache.
Nodes.
Pains in the loins.
Joint affections.
Palmar syphiloderm (psoriasis and erythema).
Syphilitic changes in the nails.
Falling out of the hair.

CHAPTER XXIX.

THE OPHTHALMOSCOPE IN DIAGNOSIS.

It was my intention, had space permitted, to have entered more fully than I am now enabled to do into the subject of ophthalmoscopic examination, in the diagnosis of uterine affections and other diseased states which either complicate or originate the retinal disorder. It is not too much to say, that every educated physician and surgeon should at least know sufficient of the ophthalmoscope to be able to diagnose an albuminuric retinitis, an hæmorrhagic infarction due to congestion, the retinitis attendant upon diabetes, the striæ and exudation of syphilis, the disseminated choroiditis of the same disease, the retinitis of pernicious anæmia, or the leukæmic retina of anæmia and leukæmia. This knowledge of the use of the ophthalmoscope is of still greater value in the diagnosis of diseased conditions both during and after pregnancy. I may quote from a review, written by me in 1879, of the admirable work on 'Ocular Therapeutics,' by Dr. de Wecker (translated by Dr. Lytton Forbes):

Nothing could be more convincing than the cases related by Dr. de Wecker, in referring to retinal hæmorrhages. It is well known how frequently such extravasations are due to secondary heart mischief, which has its source in vascular changes due to morbid blood states—as, for instance, in Bright's disease. Most important are such ocular disturbances in pregnancy. This is obvious when we remember

the effect produced on the blood by this state, and the relative importance which it has to the safety of the patient—both as an indication of head complications and other hæmorrhagic discharges, either before or during labour.

Dr. de Wecker cites the following case :

'I was requested some five years ago to examine a young American lady, twenty years of age, who was in her seventh month of pregnancy, and who complained that her sight had been somewhat dim during the last few days. Her husband begged of me to examine her that very evening, although to do this I had to disturb a large dinner-party, which neither the condition of her sight nor health prevented her taking part in. I found that there was a very slight haziness of the retina in the neighbourhood of the papilla in both eyes, and deferred further examination till the next day. At ten o'clock the following morning the ophthalmoscope showed on the left, near the papilla, a small extravasation, which certainly could not have escaped my investigation of the previous evening. Meeting a colleague, in consultation, I informed him of the fresh hæmorrhage in the left eye and the increased haziness of the papilla, and begged him to allow premature labour to be brought on. I felt convinced that it would not be long before serious brain symptoms would declare themselves, and that in any case this primipara would not arrive at her full time without some accident. One of the most celebrated accoucheurs in Paris was called in in further consultation, but I was unable to convince him of the urgency of this danger. During the night which followed this consultation—that is to say, four days after the first ophthalmic examination—the patient was seized with convulsions, following each other in rapid succession. In all haste Dr. Campbell was sent for, but he did not feel justified in forcibly delivering a

patient who lay unconscious and in a moribund condition. Death occurred the following night.'

He cites a second case, in which a renal cyst passed undetected where retinal apoplexy was present.

As regards the percentage of retinal complications in Bright's disease: 'According to the most reliable statistics,' Dr. de Wecker says, 'retinitis occurs in from 9 to 20 per cent.; less accurate give, out of 150 cases of kidney disease, 50 of retinal.'

A short time since, a patient came a long distance to consult me for failing vision in both eyes. On examination well-marked nephritic patches were seen on the retina in one eye, and the characteristic scattered dots in the other. On examining her urine I found its sp. gr. 1,008, no albumen present, but there were renal casts and epithelium ; the other symptoms pointed to the presence of granular kidney, which up to this had been unsuspected. Not in this case only has it been my lot to be the first to discover—by the ophthalmoscope—the danger that threatened the patient, and I feel assured that were the use and knowledge of this instrument generally insisted on, many diseases would be more frequently recognised in their earlier stages, and a timely warning given both to physician and patient. In noticing Dr. de Wecker's allusion to the contra-indication of hot baths in retinal lesions dependent upon nephritis, I am reminded of two cases of sudden death occurring within my own experience which were caused in this manner. The last instance was that of a lady who noticed her vision affected for a few days, and called on me to have an examination made. I happened to be absent. She left word that she would come the next day. That night she took a hot bath, which she had frequently taken before, was attacked while in the bath, and died in a few hours of apoplexy. An ophthalmoscopic examination that day might have saved her life.

But I could multiply instances in which both the detection and diagnosis of existing disease has been due to the ophthalmoscope. 'The retinitis of malignant anæmia is so constant,' says Dr. de Wecker, 'that it may be looked on as pathognomonic.'

Not long since I had a case of well-marked diabetic retinitis of both eyes under my care; in each eye there was a hæmorrhagic effusion.

In a case of diabetic pruritus now attending me, the state of the retina led to a urinary examination and confirmed the suspicion of diabetes.

The experience gathered from the treatment of over 25,000 eye patients impels me to urge on the practitioner and student the great value in diagnosis of this simple instrument.

I can only repeat, that I have known persons whose symptoms were ascribed to amenorrhœa, hysteria, anæmia, a disorder of pregnancy, a dyspeptic state or gastric disturbance, or liver derangement, in which an ophthalmoscopic examination and the discovery of optic neuritis, choked disc, detached retina, retinal apoplexy, Bright's degeneration, syphilitic effusion, would have afforded a clue to a correct diagnosis.

CHAPTER XXX.

SOME AFFECTIONS OF THE RECTUM.

THE affections of the rectum which the practitioner is called on to diagnose and treat are:

Proctitis.
Impaction of fæces.
Hæmorrhoids, external.
„ internal.
Fistula.
Abscess.
Simple ulceration.
Fissure.
Stricture.
Malignant disease:
- Epithelioma.
- Scirrhus.
- Encephaloid.
- Colloid.
- Melanosis.

Syphilitic disease:
- Various cutaneous affections of the anus.
- Ulceration.
- Stricture.

Pruritus ani.
Foreign bodies in the rectum.
Procidentia.
Polypus.
Rodent ulcer.

I deem it of use to the practitioner to introduce some remarks on the more commonly occurring forms of these diseases.

Examination.—To examine the patient for rectal disease, place her on her right side, with the knees well drawn up. Previously administer, or have administered, an enema. In cases where there is excessive sensitiveness, or where a thorough exploration is required to diagnose the presence and extent of malignant disease, painful ulcer or fissure, an anæsthetic should be administered. The necessity is clear to examine the rectum with the finger and speculum, if there is—

A sense of fulness and pain in the neighbourhood of the anus.
Pain on defæcation.
Prolapse of the bowel.
Hæmorrhage.
Discharge of any kind.

Without an anæsthetic, after an enema is administered, the patient can be made better to expose the bowel by bearing down, and thus the practitioner can touch with the finger a higher spot in the bowel. He must trust to the education of the finger in examinations of the rectum rather than to the assistance gained from any speculum. He should learn to recognise by touch the uneven and roughened feel of ulceration, the characteristic hardness of malignant disease, the smooth but tense-feel of hæmorrhoids, the contraction the result of stricture, the chink of a fissure, the pedunculated attachment of a polypus, and the internal aperture of a fistula. Above all, he must not be misled by the common statement of a patient that she suffers from 'bleeding piles,' and be satisfied with her assurance on this point, even though she tells him that she has been under treatment for piles. It has fallen to my lot to see patients

who never suspected there was anything more serious than a hæmorrhoidal state of the bowel, yet, on examination, advanced malignant disease has been discovered, or more frequently a fissure or ulcer. The dilatation of the sphincter is easily affected under an anæsthetic, and when this is done, which it should be slowly and without force, we can, with such a speculum as that of Allingham (Fig. 190), or retractors, completely explore the rectum. Simon's method of examination has already been referred to (page 62).

I cannot deal exhaustively, in a manual of this nature, with the treatment of the several affections of the rectum

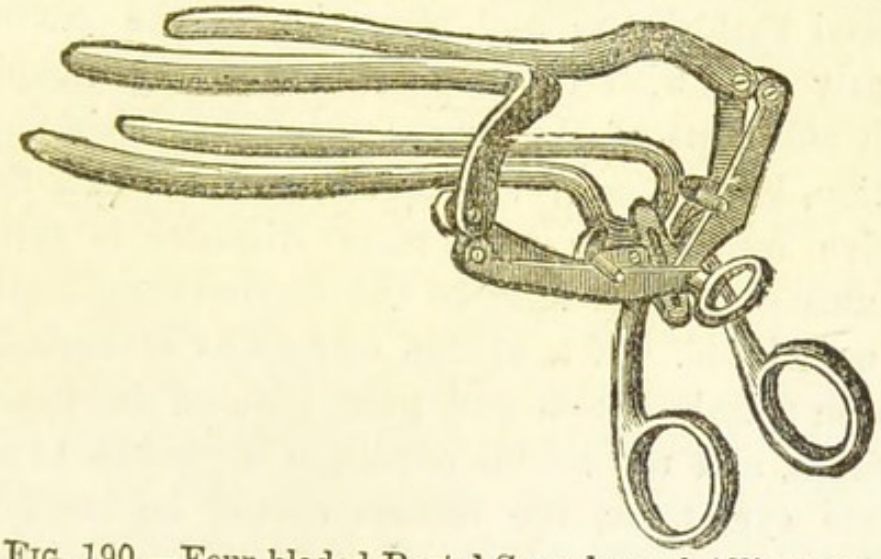


Fig. 190.—Four-bladed Rectal Speculum of Allingham.

which I have enumerated. I rather refer the reader to that work which for years I have been in the habit of recommending to students when lecturing on diseases of the rectum, and to practitioners in consultation, as the most practical and, at the same time, the most complete guide to their diagnosis and treatment, viz., the treatise on 'Diseases of the Rectum,'* by Mr. Allingham.

A few general observations, however, regarding affections of the rectum, which we have to treat in women, I think it desirable to make; and though some of these are not specially applicable to women, still they are all of such im-

* Fourth edition. J. and A. Churchill, London.

portance that I cannot refrain from insisting here on the necessity for observing the rules and precautions included in this brief chapter.

Some General Considerations.

Pruritus ani may be treated on the same principles as those followed in the management of pruritus vulvæ (see 'Remedies for Pruritus Vulvæ'). Any irritating and dirt-collecting fringes of skin which surround the anus must be cut off.

Ulceration of the Rectum and Stricture.—It must be remembered that fissure and ulceration of the rectum are frequently met with in women, both being complicated by such affections of the uterus as endometritis and sub-involution, laceration of the cervix, versions and flexions. Operative interference with rectal disorder is certain to prove unsuccessful as long as the uterine complication remains unrelieved. If a woman complains of vesical irritation, with rectal distress and pain, both on defæcation and micturition, and no uterine condition is present to account for these symptoms, the rectum should be carefully examined for fissure or ulcer. Nor should we be led astray by the proofs of cystitis existing, as a chronic cystitis is not uncommon in women who suffer from rectal disease. The treatment of painful ulcer or fissure resolves itself into palliative and radical.

Under the head of palliative we include rest, due attention to and regulation of the bowel, the administration of mild laxatives, such as any of those already recommended, to secure an efficient but gentle aperient effect; the use locally, either in lotion or ointments, of sedative and astringent drugs, as opium, morphia, belladonna, bismuth, calomel, tannic acid, hazeline, perchloride of mercury, nitrate of silver; in severe cases, the careful application

to the ulcer of either the acid nitrate of mercury or nitric acid. The radical treatment consists in operation by incision through the entire base of the ulcer and fissure, with the division of the fibres and the underlying sphincter.

The more we reflect on the insidious progress of rectal disease, the obscure and in many instances remote symptoms which attend incipient ulceration, stricture, or malignant disease, as well as the reflex disturbances which are apt to divert our attention from the rectum to some other organ, the more necessary the injunction to the medical adviser to look to the rectum when such symptoms as those of dysenteric and morning diarrhœa (jelly-like discharge), colicky pains and tenesmus are complained of. The practitioner should recollect that frequently the ulcer, or commencing stricture, is not close to the anus, but some two, three, or four inches from its margin, so that the examining finger has to be passed well up the bowel before the ulcer or stricture is detected. It is a significant fact that of seventy cases of stricture (with or without ulceration) of the rectum, published by Mr. Allingham, sixty are females. And equally significant, from an ætiological and therapeutical point of view, is the fact, that thirty-five of these patients suffered beyond doubt from constitutional syphilis.

Verneuil's operation of division of the entire stricture, or linear rectotomy, is that practised by Mr. Allingham, and which he so strongly recommends. In dilatation of a stricture, soft, bulbous-pointed, hollow bougies may be used; the surgeon should have some of these of different sizes by him; and it is by far the safest plan for the surgeon to dilate the stricture rather than permit the patient to pass the bougie herself.*

I would wish to emphasise this opinion of Mr. Allingham: 'A stricture of the rectum resulting entirely from

* The larger sizes of the uterine bougies (p. 57) will be found to answer well for the surgeon's use. They must be used with care.

muscular spasm is what I am very much disinclined to believe in.' So am I; and further, I believe that in many of these cases of so-called 'spasm,' we have simply a neurotic reflex irritation (that there is no real stricture to necessitate dilatation is at once proved by an anæsthetic) which causes a tonic contraction of the sphincters, generally exaggerated by the presence of hard, dry and impacted fæces.

Malignant Disease.—The most prominent symptoms of malignant disease are: pain on defæcation and after it; the presence of blood, both on the stools and after they are passed; sometimes there is a semi-watery discharge, with a peculiarly heavy and fœtid odour. On examination there is the characteristic hard feel, the extent of the roughness, or the 'broken-down' sensation, being dependent upon the nature, duration, and extent of the disease. But the most important feature of this terrible affection for the young practitioner to keep before him is, the very insidious nature of its onset and the comparatively trivial symptoms which may accompany the first stages of the disease.

A fine, healthy-looking young man came into my study, about six months since, to consult me for piles. On taking his history my suspicions were aroused. I made an examination, and, to my amazement, I found extensive ulceration and a typical malignant stricture, about three inches from the anus. I had an anæsthetic administered the next day to confirm my diagnosis and determine the feasibility of operation. I found there was no chance of any operative interference, in which opinion I was subsequently confirmed by that of Mr. Allingham, who saw him with me in consultation. He lived for a little over four months from the day I first examined him. He had been using remedies for supposed hæmorrhoids for nearly five months previously to my seeing him.

The power to prolong life or merely to relieve symptoms will depend on the extent, number of adhesions (to vagina, or uterus), and the situation of the disease. Life may be prolonged by extirpation of the rectum or colotomy.

Pain may be mitigated by opiates given internally, and other sedatives; the administration of morphia subcutaneously; opiate injections into the bowel; morphia suppositories; and the unpleasant odour controlled by the free use of disinfectants and antiseptics. I have found permanent benefit result from the administration of Chian turpentine.

Abscess and Fistula.—1st. All abscesses about the region of the anus and perinæum should be opened early (with ordinary antiseptic precautions).

2nd. Be careful (in women) of too free division of the sphincter in operating for fistula—most unfortunate consequences from difficulty of retaining flatus or fæces may be the result.

3rd. Be rather over-cautious in operating for fistula when it complicates tubercular phthisis; but if the case be not far advanced, and with returning strength, the propriety of operating should be considered.

Hæmorrhoids.—As a rule, unless there are very urgent symptoms, it is better not to operate on pregnant women for hæmorrhoids. Mr. Allingham's remarks on the subject of operation for hæmorrhoids when there is a version of the uterus are so important that I quote them: 'In women suffering from a retroverted or anteverted uterus, an operation for piles is very undesirable, and will most certainly end in disappointment unless the uterine complication be attended to at the same time, or what is better, prior to the operation. My experience warrants me in saying that if you can restore the uterus to its normal position and size, you will find that the rectal affection will soon become a

comparatively small matter. In my earlier operations upon women I did not take into sufficient consideration the condition of the uterus. I could relate many cases in which I was most grievously annoyed to find that the patient did not recover as I had anticipated she would have done. I have found that if the wounds heal there is but little relief afforded, the same bearing-down and distressing sensation exists as it did before the removal of the piles. More commonly, the wounds do not heal, and very painful, unhealthy ulceration follows; this will never get well as long as the abnormal condition of the uterus remains.' I may here say that many years have elapsed since I first attended the practice at St. Mark's Hospital, and had the opportunity of seeing Mr. Allingham operate both by clamp and ligature. Since then I have never had occasion to regret operating by means of the ligature, both as regards the effectiveness of the cure and the freedom from hæmorrhage. I am aware that the clamp is a cleaner, more rapid, and equally effective method (especially the new clamp, see p. 408), used after the 'crushing' method of Mr. Pollock), but to the practitioner, operating on women with relaxed tissues, and large venous hæmorrhoids, and perhaps living at a distance from the operator, I would say operate by the ligature. The best silk is strong Bantock's, such as is used in the operation of ovariotomy. No matter how brilliant and pleasant be the results in the large proportion of cases with the clamp, or clamp and cautery, the surgeon may in some unexpected case be caught, and find it difficult if not impossible to stop the hæmorrhage. 'I do not think,' says Mr. Allingham, 'in the whole range of surgery there is any procedure worthy the name of "operation" which can show a greater amount of success or a smaller death-rate than the ligature of internal hæmorrhoids.'

Of 4,013 cases of hæmorrhoids ligatured at St. Mark's

Hospital, there were five cases of tetanus and one case of doubtful pyæmia. The death-rate from all causes in operation by ligature in the hospital during a period of over forty years was 1 in 670; four of the five cases of death from tetanus occurred during a year (1858) when tetanus was rife in London.

The occurrence of the menstrual period must be inquired into before operating. It is not prudent to operate on the rectum when menstruation is approaching; we should select the time between two periods.

It is well to remember that procedentia of the rectum is at times associated with polypus; and the practitioner should be careful not to mistake these states for hæmorrhoids. Procedentia occurs perhaps more frequently in women than in men, and often increases to a large size. Mr. Allingham speaks most highly of Dr. Van Bruen's treatment; longitudinal strips are made in the protruded intestine with a Paquelin's cautery, avoiding the large veins, and then returning the intestine, having first *oiled it well.* After return of the bowel, he secures further contraction of the anal aperture by division of the sphincter with the Paquelin's knife in two places, and stuffs the wounds with oiled wool. Longitudinal and circumferential contraction is the result.

If a *polypus* be discovered in the rectum, torsion or ligature will be sufficient to remove it without danger.

Rectal Therapeutics (General Hints).

Sedatives and Soothing Remedies.—Great relief from rectal pain, from proctitis, or inflammatory hæmorrhoids, or threatening abscess, is often secured by the application of leeches round the anus. A warm toast poultice is a ready and grateful form of stupe to apply when the leeches are re-

moved. A piece of thick toast is made, on which boiling water is poured; the toast is then squeezed between two plates, so as to press out the water; it is supported on a handkerchief, or covered with a piece of oiled silk, and laid over the perinæum, being maintained in position by a T-bandage. A piece of *spongio piline*, used as a stupe, or to apply sedatives to the anus, is a cleanly and ready means of relieving pain. When recovering from a prolonged attack of typhus fever, I suffered from severe proctitis, which terminated in abscess. The only relief I had from pain was from small injections of very hot water, with a little laudanum added, and given at frequent intervals. The warm sit-bath is often very comforting to a patient, or the steam of laudanum water placed in the night-chair on which the patient sits.

In the instance of women suffering from external hæmorrhoids, the diet should be carefully regulated, and scrupulous cleanliness insisted on after stool; mild laxative medicines should be used, and such cholagogues as podophyllin, iridin, euonymin, with small doses of mercurial pill or hydrarg. cum creta. Any of these aperient waters may be given: Æsculap, Victoria, Hunyadi Janos, Friedrichshall, Carlsbad, or some of the compound liquorice powder. Such a pill as the following will be found to act sufficiently:

℞ Pulv. iridin.
,, euonymin.
Hyd. cum cret.
Ext. col. co., āā gr. i.
Ipecacuanhæ.
Ext. hyoscyam., āā grss.
Ft. pil.

Or

℞ Pulv. euonymin, gr. i.
Pil. hydrarg., gr. i.
Pil. rhœi. comp., gr. ii.
Ext. nucis vom., grss.
Ext. hyoscyam., grss.
Ft. pil.

The confections of sulphur, senna, and black pepper are useful laxatives, especially the latter. A good form is

℞ Tartr. potassæ acid., ʒii.
Pulv. jalapæ, ʒi.
Confect. sulphur., ℥i.
„ sennæ, ℥iss.
„ piperis nigræ, ℥ss.
Mel. opt., ad ℥iv.
Ft. confectio; ʒi. as a dose.

Hazeline; calomel ointment, with bismuth and belladonna;

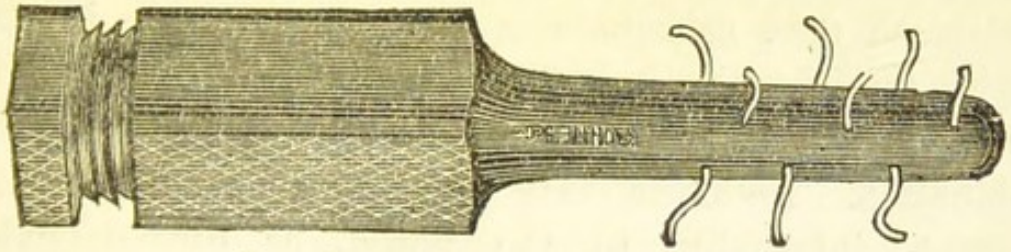


Fig. 191.—Ointment Applicator.

liq. plumbi subacetatis; ointment of bismuth with glycerole of lead; ointment of tannic acid, with bismuth and opium, will be found soothing applications.

To apply ointment to the rectum, an ointment positor is required, as otherwise the ointment is wiped off the surface of the finger before it reaches the part. Fig. 191 shows the ordinary ointment applicator.

In the case of internal hæmorrhoids, we ought always to be careful to examine for retroversion of the uterus, and any version or flexion should be rectified.

Tannic acid, gallic acid, acetate of lead, injections of matico and oak-bark, solutions of carbolic acid, chromic acid,

nitrate of silver, are all useful as astringents in various rectal conditions. Perhaps the best local astringent in cases of rectal hæmorrhage is the subsulphate of iron, which may be used either in the form of ointment (ʒii. ad ℥ss.), suppository (gr. ii. ad gr. x.), or as the liquor ferri subsulph., diluted according to the strength required. The acids, nitric, carbolic, and chromic, and the acid nitrate of mercury, are the most powerful caustics we can apply both to ulcers or bleeding mucous surfaces; of these the acid nitrate of mercury is probably the best. The surface to be touched should be carefully exposed, and the acid applied with cotton-wool or with a Playfair's probe. The part is well oiled after the application. For all cases where the actual cautery is required, the best instrument to use is the thermo-cautery of Paquelin.

In cases of ulceration of the rectum, or fissure, ointments of bismuth (℥ss. carbonate in ʒii.), calomel (ʒii. in ʒii.), morphia (gr. iii. ad gr. v. ad ʒii.), belladonna (gr. xxx. in ʒii.), pulv. opi. (gr. xx. in ʒi.), may be used separately or in combination. Iodoform may be applied in the form of ointment, internally, to the bowel, or dusted, externally, in fine powder diluted with starch (gr. x.—xxx. ad ʒii.); calomel or bismuth ointments, in combination with belladonna, opium, and tannic acid, are useful ointments for internal hæmorrhoids. In syphilitic cases especially, the iodoform ointment, or ointment of perchloride of mercury (gr. ii. to gr. v. ad ʒi.), is most useful. Hazeline is an admirable astringent remedy, both when given internally and applied externally, for hæmorrhoids. Both the glycerols of tannin and of lead are useful external applications for fissure and hæmorrhoids. Goulard's lotion, in combination with the liquid extract of opium, is a capital sedative in hæmorrhoidal congestion and in ulceration.

Some Minor Operations on the Rectum.

The appliances necessary for the ordinary operative measures required in affections of the rectum are:

A few specula.
Rectal probes and director. (Fig. 192.)
Pile scissors, flat and curved. (Fig. 193.)
„ forceps. (Fig. 194, 195.)
„ fork. (Fig. 196.)
Straight spring scissors. (Fig. 197.)
Blunt and probe-pointed bistouries.
Curved scissors.
Clamps.
Strong silk ligature.
Torsion forceps.

Excision of External Hæmorrhoids.—This is best effected with the straight spring scissors; the pile is simply snipped off; if they be resolved into loose tags of skin which fringe the anus, they are seized and cut off in the same way. The practitioner must be careful not to cut away too much integument, or remove several of these tags at the same sitting, lest serious contraction of the anal orifice result. If a woman is suffering severe pain from a congested and inflamed pile, incise it. Pinch it up with the thumb and forefinger, steady it, and pass a curved bistoury through it.

To Ligature Internal Piles.—Having regulated the patient's bowels for a few days previously, have an enema administered early on the morning of the operation. An anæsthetist, assistant, and nurse are required. Have the patient brought well to the edge of the bed and placed opposite a good light. Place a few towels or folded sheets under the buttocks. When she is fully anæsthetized, dilate the sphincter with the fingers and thoroughly expose the piles. Cleanse

the surface of the exposed bowel. Decide the number of ligatures which it is necessary to apply. On a chair or small



FIG. 192.—Rectal Probe and Director.

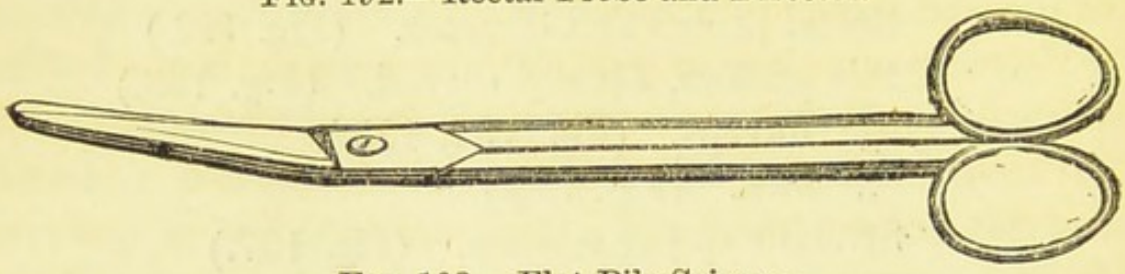


FIG. 193.—Flat Pile Scissors.

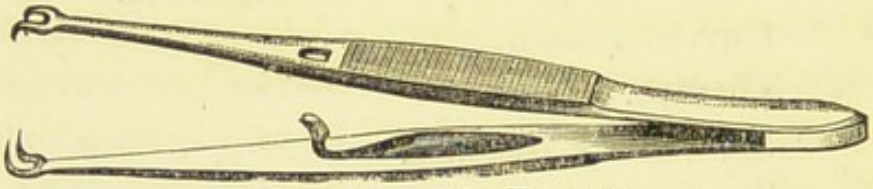


FIG. 194.—Pile Forceps.

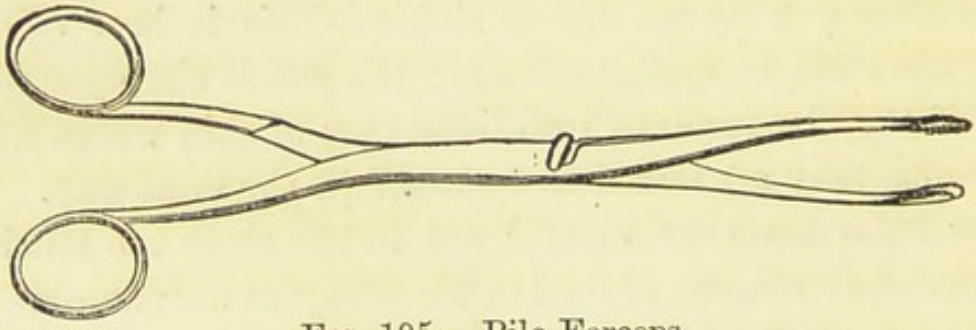


FIG. 195.—Pile Forceps.



FIG. 196.—Salmon's Pile Hook.

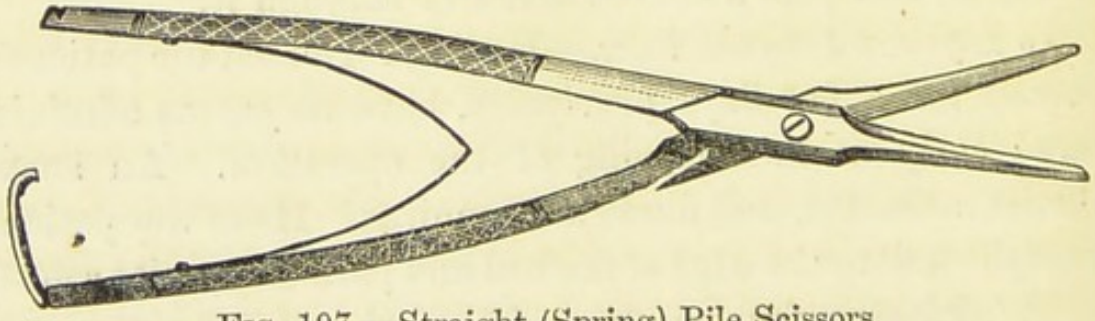


FIG. 197.—Straight (Spring) Pile Scissors.

table at the side of the operator or assistant should be—

Some ready-cut ligatures.

Pile-scissors.

Curved and flat scissors.
Torsion forceps.
Bulldog forceps.
Pile-fork and pile-forceps.

The nurse has alongside her some carbolized water and convenient sized sponges.

Each pile (commencing with those nearest the anal aperture) is seized with the fork and drawn well down and out from the coat of the intestine; the pile-scissors is now laid flat against the rectal tunic, and the blades made to embrace the sides of the hæmorrhoid, the blunt points of the scissors not quite reaching to the summit of the pile, and leaving its upper connection with the bowel free. With a stroke of the blades the division of the tumour is effected. The surgeon, laying down the scissors, transfers the pile-fork to his assistant, and taking a ligature, carries it well up to the upper angle of the wound he has made. He next secures this ligature firmly with a double or triple knot, and cuts off one end close to the pile. He proceeds thus with each pile. Any spurting vessel he secures with a torsion forceps, or if necessary a carbolized catgut ligature. He next inspects the anus, and removes any superfluous folds of skin with the scissors. The part should be sponged with some carbolic lotion, and a T-bandage with a thymol pad applied over the perinæum. An opiate is administered, and the bowels should be kept quiet for at least four days after the operation. Ligatures generally come away on the seventh or eighth day, and if not spontaneously or with a motion, do so when gentle traction is made on the strings. The patient had better remain in bed until the ligatures separate, and after this she may lie on a sofa for a few days before moving about.*

* For special information on this method of operating, see Mr. Henry Smith's article (p. 839), in Holmes's 'System of Surgery.' Mr. Smith is a warm advocate of this method of operating.

Clamp and Cautery.—After the remarks I have made on the 'clamp and cautery' method of removing piles, I do not intend to enter into the details of the operation. I have, on a few occasions, used Allingham's small clamp and Paquelin's cautery without any bad result. The preliminaries are the same as for operation by ligature; the pile is brought down, secured by the clamp, and then it is cut off with the bent scissors, the cautery being applied at a dull heat. To Mr. Pollock, of St. George's Hospital, we are indebted for the suggestion to remove piles by crushing. Mr. Allingham's modification of Benham's clamp is the outcome of Mr. Pollock's suggestion. Fig. 198 shows Mr. Herbert Allingham's crushing clamp. The steps of the operation

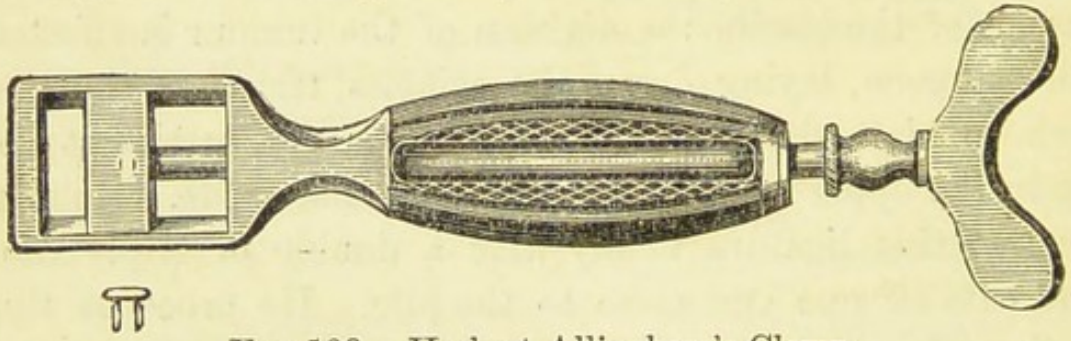


Fig. 198.—Herbert Allingham's Clamp.

are as follow: The sphincters are first dilated. The pile is drawn into the clamp, and is crushed by tightly screwing up the bar of steel, and keeping it thus applied to the pile for the space of half a minute. The projecting portion of the pile is removed with scissors. 'On the whole,' says Mr. Allingham, 'crushing is a satisfactory method of removing internal piles, and is in every respect superior to the clamp and cautery.' Still, we are not safe, in a certain percentage of cases, from the risk of hæmorrhage, and I repeat that in the case of large hæmorrhoids, and when the patient lives at a distance, the practitioner and patient are safer with the ligature.

To Plug the Rectum for Hæmorrhage.—The following method of plugging the rectum, advised by Mr. Allingham, will be found by far the best. A good-sized conical-shaped

sponge is secured by passing a piece of strong silk ligature through its apex. The sponge is then wet and squeezed dry, and the interstices filled with alum or subsulphate of iron. Guided by the forefinger of the left hand, the sponge with the conical end up is pushed well into the rectum for the extent of five inches, and the silk cord hangs from the anus. The space below the sponge is now filled with cotton-wool, on which is sprinkled more of the alum or subsulphate of iron. The ends of the string hanging from the anus are now taken in the left hand, and traction is made on the sponge while the cotton-wool is pressed up against it with the finger of the other hand. The effect of the counter-pressure is to spread out 'umbrella shaped' the sponge, and to compress tightly the wool. This plug may remain in for a period of from eight days to a fortnight. If a patient is troubled with wind, a flexible catheter may be introduced through the wool and sponge or at the side, and this prevents any troublesome flatulence. Opiates at the same time should be given.

Impaction of Fæces; Fæcal Tumours.—Experience has taught me how extremely careful we must be in cases in which obscure abdominal symptoms are present, not to overlook the possibility of a fæcal accumulation in some portion of the intestine. I have known a fæcal tumour mistaken, through the signs and symptoms it causes, for ascites, malignant tumour, ovarian dropsy, and aneurysmal enlargements of the abdominal aorta. Many times I have known fæcal accumulations in the rectum, the result of habitual neglect of the bowel in women, aggravate, if they have not brought about, various forms of uterine disorder; and, though it may be most misleading to the practitioner, the presence of a fæcal accumulation in the bowel is quite consistent with semi-liquid motions and a certain degree of response to laxative or aperient medicines. In one of the most re-

markable cases I have ever had under my care, the patient, who suffered from hæmatemesis and hæmorrhage from the bowel, and who had a large pulsating mass, which was easily seen and felt in the umbilical region, continued for months to pass liquid and semi-solid motions, and medicine seldom failed to act, though there were frequent attacks of violent vomiting. There were, it is true, occasional attacks of impaction of fæces in the rectum most troublesome to overcome, and local interference was necessitated with the finger and scoop to remove the masses. The patient's weight was reduced over three stone. Ultimately and unexpectedly, when different opinions by competent authorities who saw the case had been given, and various surmises as to the cancerous, aneurysmal, and other nature of the tumour had been expressed, the patient passed, after a bolus of calomel was given, and other aperient medicines had failed to operate, enormous masses of clay-like fæces, and from that moment the pulsation and tumour disappeared, and the patient recovered. I was myself amazed at the quantities which came away in this case. Of course if such a tumour as that I have spoken of existed in the rectum and within reach of the finger, there would be no excuse for error; but if the mass is in the cæcum or transverse colon, and lies in the neighbourhood of the aorta, considerable difficulty in diagnosis may arise. Fortunately, in the case I refer to, and which was attended with me by Dr. Hobart of Cork, we neither of us committed ourselves to a definite diagnosis, as we were both uncertain of the presence of a fæcal mass, and yet did not wish to pronounce absolutely as to the nature of the case, though the pain, emaciation, vomiting and discharge of blood from the bowel, the pulsation and deep-seated nature of the tumour, and the occasional free passage from the bowel, made us lean rather to the side of

malignant disease. This case, with others of a somewhat similar character, taught me a lesson which has not been thrown away.

On several occasions I have had to empty the rectum of hard masses. In a case which I had not long since with Dr. Thomas Neville, I dilated the sphincters thoroughly under chloroform, and removed the masses with my hand. In another, occurring a little time previously, the patient was suffering from fissure, and had encouraged the accumulation of an enormous mass of hard fæces rather than permit the bowel to move. I administered chloroform and dilated the sphincters, removing the masses with my hand, using, as I always have done in such cases, a large enema of almond oil and thin gruel immediately afterwards. The student or practitioner can draw his own conclusions from the outline of such cases. Twice I have removed from the rectum foreign bodies which have caused obscure symptoms; in one case a fish-bone, and in the other a portion of wood was the offending tenant. The possibility of this cause of rectal or ischio-rectal abscess should not be overlooked.

Fistula in Ano may be operated on by elastic ligature (known as 'Dittel'), introduced by Professor Dittel of Vienna, or by the knife. Cure may be attempted by the galvanic cautery, or by such means as dilatation of the sphincters and the application of carbolic acid, or chloride of zinc to the fistulous canal, while the external orifice is kept open with a drainage-tube or shirt-collar stud (Allingham). Mr. Allingham has devised a simple and ingenious hook for drawing the ligature from the bowel through the fistula. (Fig. 199.) In ninety of his cases, the average time the ligature took to cut through was six days. The advantages are that we avoid the infliction of much pain,

and the patient can move about. But I must refer my readers to Mr. Allingham's work for full information on this subject of 'elastic ligature.' As regards fistula, I would broadly lay down these rules:

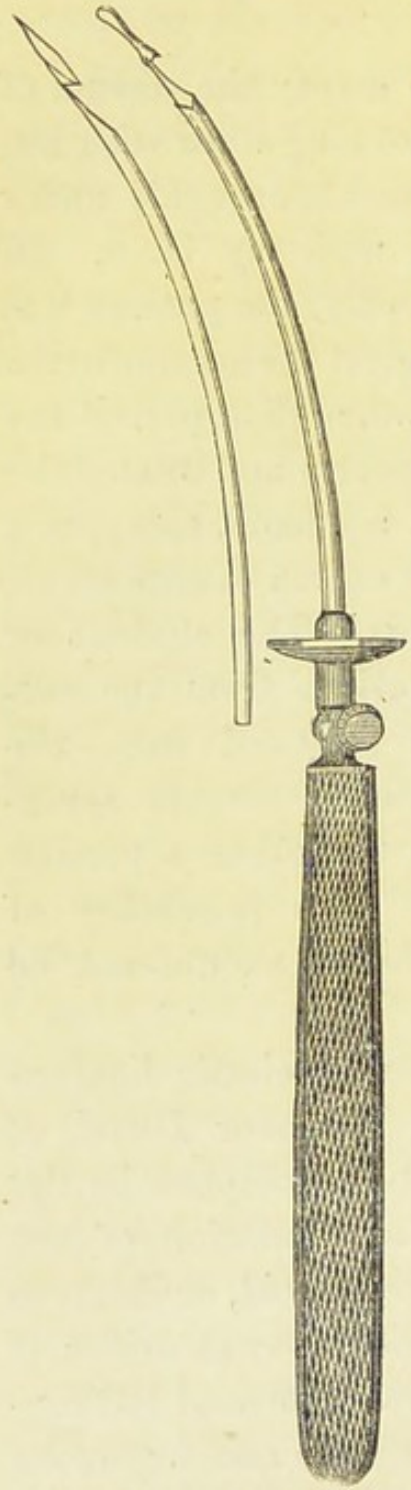


Fig. 199.—Allingham's Ligature Tractor.

(1) Do not be tempted to temporize with a fistula, complete or incomplete; delay, in the large proportion of cases, only leads to more extensive burrowing, and renders the inevitable division of the fistula a more serious step.

(2) Remembering the caution already laid down with regard to women, be on the safe side, and divide a fistula thoroughly with the sphincter muscle.

(3) In operating we cannot make too careful search for by-channels and burrowing sinuses in the track of the parent canal. Open these also freely.

(4) Make a blind internal fistula complete, and divide the sphincter.

(5) Dry wool, or wool with a little weak thymol ointment, is the best dressing after operation. Do not overdo dressing; it is apt to irritate and create discharge or delay the healing process. A little weak Condy-water will keep the part clean.

CHAPTER XXXI.

ON THE DIAGNOSIS OF INFLAMMATORY AFFECTIONS AND TUMOURS OF THE BREAST, WITH SOME REMARKS ON THEIR TREATMENT.

The Mammary Gland.

I have added these chapters to this manual rather with the view of impressing on the student the necessity for greater attention to affections of the breast than he generally devotes to them when attending hospital, than with the hope of doing anything like justice to the conditions it professes to treat of. In practice it will be found that a sound knowledge of the affections to which the mammary gland is subject, both in unmarried and in married women, as the consequence of pregnancy and lactation, is of the greatest importance both in securing the confidence of his patients and for his own reputation's sake. Obviously a description of the female mammary gland and its affections should be included in any complete work on 'Diseases of Women;' and it is rather a matter for surprise that they are generally not so embraced in text-books on this subject.

I must rest content with a brief notice of the principal causes of inflammation of the more superficial and deeper structures of the gland, and the important facts bearing on the differentiation of cancer and its diagnosis.

The Examination of a Breast.

Before referring more particularly to some special inflam-

mations, it may be well to say a word on the method of examining the breast.

In taking the history of any case of mammary affection, there are certain evidences into which it is absolutely necessary for the surgeon most carefully to make inquiry :

(1) *The Age of the Patient.*—Neuralgic affections, adenoma, painful mammary tumours, are more frequently met with in young females, at least before thirty ; whereas sarcomatous, cystic, carcinomatous growths, chronic eczematous states of the nipple, and psoriasis, occur more generally after that age ; malignant diseases particularly being common between the ages of thirty-five and fifty.

(2) *The Relation to Menstruation.*—The increase of development of the breasts, with the establishment of the menstrual function at puberty, gives rise to sympathetic disturbances, neuralgias, and, in some females, irregular or undue development, which may induce inflammation from slight exciting causes, such as pressure, injuries, cold. At this period, also, adenomatous formations may commence. The nipples are sensitive, and are apt to become congested and irritable. In some women the relation of the uterine function to the mammary gland is marked by increased sensitiveness, with accompanying fulness and turgescence of the nipple during the catamenia. And in cases of uterine congestion associated with dysmenorrhœa or amenorrhœa, neuralgic pains and tenderness of the breasts are not unfrequent.

(3) *Ætiological Considerations.*—Certain antecedents of the patient, both of her individual history and circumstances and hereditary influences, have to be taken into careful account when examining a breast case.

(*a*) *Injuries.*—Squeezes and blows on the breast, especially in young females, may cause inflammation or abscess, or perhaps result in a small tumour or nodosity. During

the lactiferous period, and more especially during and after pregnancy, is this likely to occur. When we consider how exposed the mammæ are to bruises of one kind or another we are afforded a ready explanation of the common belief in this class of injury as a cause of mammary growths.

Velpeau, and before him Sir Astley Cooper, drew attention to spontaneous ecchymosis as a consequence of suppressed menstruation and chlorotic or purpuric states. It is remarkable, in some women, how slight a degree of pressure will be sufficient to cause an extensive discolouration of the breast. Velpeau thought that these spontaneous extravasations might be the cause of further gland-changes, and perhaps tumours. Rupture of bloodvessels and of the lactiferous tubes, resulting in escape of blood and milk, may be the starting-point of abscess, if not of adenoid growths.

(*b*) *Syphilis.*—Rather is it important to keep in view the relation of syphilis to cutaneous affections of the breast, than its association with any important changes in the deeper gland-tissues. Primary syphilitic sores are met with on the breast, and secondary eruptions of various kinds.

The principal of these are: Tubercles, eczema, psoriasis, ecthymatous ulcers, rupial sores.

(*c*) *Pregnancy and Lactation.*—The frequent occurrence of inflammatory changes in the breast during the active discharge of its functions, both in the formation and secretion of milk, would deserve more than a passing notice; so also would the relation which pregnancy and lactation have to mammary inflammation and interstitial changes in the gland-tissue, as also to morbid growths. During pregnancy, inflammatory changes in the breast are not common. It is when the mother is nursing, or commencing to nurse, that mammary troubles are prone to arise. These may occur at any period of lactation, or after the weaning of the child. Mammitis may come on shortly after the first appearance of

the milk and in the commencement of nursing. On the other hand, abscess may occur some weeks or months after the child is weaned. Localized congestions may happen, and stasis of milk in the gland-ducts, which lead, if not to inflammation, to those knotty milk-tumours that may either be absorbed or become encysted, or terminate in adenoid growths. The nipples take a prominent part in the causation of mammary inflammations and the abnormal changes which are consequent upon pregnancy and lactation. Imperfect development, flattening, inflammation, hyperæsthesia, chaps and fissures, eczema or impetigo, are all causes of mammary inflammation during lactation. This is the result, not so much of the condition of the nipple and the obstruction to the escape of the milk, as the interference which the sore nipples offer to the child's application to the breast. Perhaps in every-day practice there is no cause so frequent of inflammation of the breast and abscess as fissures, so-called 'cracks' of the nipples, and excoriations. These are frequently preceded by a flattened state of the nipple. Parturition and the consequent lactation are the causes of the various kinds of lacteal tumours, deep-seated abscesses, whether superficial, submammary, chronic mammary (cold), diffused, encysted, or abscess of the nipple, which are found attacking the breast after pregnancy. Nor is it any matter for astonishment that during a time and condition of life when the gland is in a state of great activity, highly vascular, and prone to congestion, it should, from its exposed position, owe so many of its morbid conditions to the infliction of blows or other injuries which are inflicted during the child-bearing period. Nor must we forget the condition of the blood both during and immediately after pregnancy, which not alone predisposes to, but likewise favours greatly, the occurrence of inflammation.

(*d*) *Heredity.*—Though it may be considered doubtful as

a cause of malignancy, still I have no hesitation in saying, that, as an element in determining our diagnosis or arousing our suspicions in a doubtful case, proofs of hereditary influences on the side of either parent should always be taken into consideration. The evidence is of too convincing a character that they exert a predisposing influence in the conversion of benign into malignant growths, and that where such a diathesis has existed in father or mother, it is likely to reappear in the offspring; and, perhaps, in no organs is this predisposition more frequently manifested than in the uterus and breast.

Symptoms. Pain.—The nature, severity, and time of occurrence of the pain complained of, will often assist the surgeon in his diagnosis of a mammary affection. As he must not place undue importance on the existence of pain, even of a severe character, so he must learn never to despise this early indication of some form of interruption to the harmony of the processes of nutrition and secretion in the gland, or disturbance, whether central, peripheral, or reflex, in its nervous supply. There is the pain of which the sufferer complains, and which is out of all proportion to any local manifestation, and yet is frequently present when, on careful examination, the breast is found to present no evidence of either inflammation or tumour. Perhaps it is aggravated by any pressure on the gland, and also in the course of the intercostal nerves. The pain may be described by the sufferer as 'agonizing,' and is either always present, or comes in fitful starts. At times the patient will point to some particular spot in the breast from which the pain radiates, in the course of the mammary, cervical, and intercostal nerves. It may be that total relief from the pain is felt for some weeks or months, and then it recurs with greater intensity than before. These pains are essentially neuralgic in character. Both Sir A.

Cooper and Velpeau have graphically described them; and both these authorities also noticed their association with small adenoid tumours—'nodosities,' as Velpeau styled them—and also 'irritable tumour of the breast.'

Occasionally the tumour may be of a large size, but even here the freedom from pain when the tumour is examined, the fitful and excessive character of the pain, and the characteristic nervous, excitable, perhaps hysterical, temperament of the sufferer, together with the absence of other proofs of malignant disease, will assist us in distinguishing the pain from that of cancer. Every now and then we meet with patients who complain of this neuralgic pain in a breast, and who are naturally alarmed and inclined to exaggerate the nature of the pain, through the fanciful idea that it must be associated with 'something bad' in the breast, and who will 'imagine' a tumour (Velpeau) even if there be no tumour present. These women frequently have had some uterine complications, or have had mental worry, perhaps are anæmic or chlorotic, with functional, cardiac, renal, or gastric disturbances.

There is the heavy, throbbing pain of submammary inflammation, which every movement of the shoulder aggravates; the deep-seated pain of mammary inflammation, increasing, when suppuration is commencing, to that sharp and severe 'lancinating' pain which marks the formation of abscess. On the other hand, in so-called 'cold abscess,' in which a large quantity of pus is occasionally formed, in different situations, without much disturbance of the general health, both in the mammary gland and in the submammary cellular tissue, pain may be almost absent, or so trivial that the woman is surprised at the enlargement of the breast, which is the principal sign she notices.

In the growth of adenoid tumours and chronic mammary tumours, pain may be absent or very trivial; so

also may this be the case in lipomatous growths. Whereas the general rule in malignant growths is, that pain of some degree, and of varying character, is present at some period of the disease, though it is well to remember that the presence of pain is not the invariable rule in cancer, and that extensive growth is occasionally met with where no pain has been complained of. In the earlier stages of malignant growth, the pain complained of is frequently of a neuralgic character, and follows the course of the superficial mammary nerves; later on it is shifting and darting—it is more fixed in the breast, and partakes more of a 'stabbing' or 'burning' nature, and is frequently increased at night. A peculiar pain associated with malignant disease of the breast is that described by the woman as if 'cords or strings were drawing the breast together.' Again would I repeat the dictum of an old surgical teacher of the author's, which applies as much to the breast as to any other organ, perhaps more so, 'Never neglect pain; always seek for its source, and endeavour to discover its cause: no pain which a patient complains of is too trivial to be altogether ignored.'

The Physical Examination of a Breast. (*a*) *Inspection.*—In examining a breast for a suspected tumour, the patient should be seated, and the entire chest should be bare. We should then carefully contrast the relative appearances as regards size, form, colour of integument, and the nipples of each breast. Examining the integument, we note any change of colour, puckering, or wrinkling, and the surface over which this alteration in appearance extends. As regards the nipple, we notice its projection on the one hand, on the other, its retraction or flattening, the presence of any fissures, cracks, or discharge (sanious, serous, or of milk).

(*b*) *Palpation.*—We now lightly place the fingers of each hand under either mamma, and, gently raising both, judge of the relative weight, mobility, elasticity, and softness of each.

Transferring now our attention to the healthful breast, we palpate it gently with the two hands transversely, judging thus of the nature of the normal gland and its physical character in the individual before us, and also, not an unimportant point, its natural sensitiveness. We now do the same with the affected breast, isolating any hard masses, circumscribing the morbid growth, perhaps searching for the presence of milk, tracing the boundaries of the sensitive area and the course of the painful nerves. We finally place the fingers of the two hands (this may be best done in the recumbent posture) on the surface of each breast, we palpate it from above down, estimating the degree of hardness, the nature of any nodosities, remembering the possibility of prominent ribs deceiving us in our estimation of the size of a growth. We note the character of the integument, its immobility and adherence. While thus engaged, we must keep before our mind the age of the patient, the duration of the growth, and any possible connection between it and the presence or suppression of lactation.

(*c*) *The Axillary Glands.*—Having thus examined the breasts, we transfer our fingers to either axilla, and carefully contrast the state of the axillary glands, and judge of the extent to which they are involved.

(*d*) *In Inflammatory States* we seek for hardness, œdema, tension, redness of the skin, general fulness of the breast, and fluctuation. If the abscess be superficial, the sense of fluctuation is easily discerned, following as it does soon after the pain, increased heat, and redness. The fluctuation is generally localized to one part of the breast, more frequently the inferior portion, and to the outer side of the nipple. On the other hand, if the inflammation be seated in the substance of the gland—mammary abscess, intra-glandular abscess (Birkett), parenchymatous abscess (Velpeau)—the œdematous state of the gland, and the diffuse nature of the

inflammatory process, or the several points of suppuration, frequently render the certainty of fluctuation difficult to decide. However, the general swelling of the breast, with the consecutive redness and œdema, the characteristic exhaustive pain, and severe constitutional disturbance, are, as a rule, sufficiently diagnostic of this affection. It is rather in submammary inflammation, where the breast is not primarily engaged, but is pushed forwards and made prominent by the underlying effusion, that the detection of fluctuation is difficult; more particularly is this the case if the abscess be of the 'cold' or 'chronic' kind. 'If,' says Velpeau, 'after a week or more of inflammatory symptoms, the general reaction, redness, and pain diminish, without the tongue becoming cleaner or the breast subsiding, we may feel sure that an abscess has formed. There can be no doubt of it if there be at the same time a little puffiness, either around or on the surface of the breast, and especially if this œdema preserve the impression of the finger, and a certain degree of redness accompany it; and if for some days there has been indistinct shivering towards nightfall.' It is in this form of abscess that we find the sense of fluctuation best conveyed over the surfaces of the ribs, or at the circumference of the mamma, and that we are able to move the entire breast over the subjacent layer of effusion or fluid.

The Probe in Diagnosis.—It is in submammary abscess that we find more frequently sinuses and fistula. Admirably Velpeau describes the condition which results under the name of *en bouton de chemise*, or 'shirt-stud' abscess. This may occur in two ways: either a subcutaneous abscess has travelled, by a sinuous tract, through the denser tissue of the gland to the submammary areolar tissue in which a secondary abscess is formed, or the pus has taken the opposite course, and has passed from the deep tissue and through the substance of the gland to the superficial; in

either case there is a superficial and deep cavity, communicating by a canal passing through the dense glandular tissue. Those who have been unfortunate enough to have had any well-marked cases of this complication to treat, will not readily forget them, more especially if they occur in private practice. I have little doubt that such abscesses commence through hesitation on the part of both patient and surgeon, as also, from want of discretion on the part of the latter in making the necessary incision in the proper position, in the case of an ordinary glandular abscess; at least, they had such an origin in two typical cases I have had under my care.

In the two cases I refer to, the patients had allowed the abscess to burst, and then continued poulticing the breast. When I saw them some months afterwards, one or two apertures existed in the neighbourhood of the nipple. The entire breast was enlarged, pushed forwards, œdematous in parts, discharging a thin pus mixed with milk secretion. The probe passed down about two inches through the apertures into solid tissue, and was arrested. After free opening of these superficial sinuous passages, and the evacuation of a quantity of thin pus, a large sinus was discovered at the bottom of the wound. On carrying a well-bent probe into this, it passed down to the pectoral muscle, and I was able to completely revolve the probe thus curved, proving that I was in a large cavity, underlying the breast, of at least five inches in circumference. In my first case of this kind I hoped, by enlarging the sinus and evacuating any pus contained in the deep cavity, to effect a cure by daily syringing, and the use of carbolic acid, iodine, and chloride of zinc injection. I opened the dense canal leading to the abscess and evacuated a large quantity of pus. I tried this treatment, keeping the wound pervious with strips of linen wet with carbolised oil, and washing the cavity out daily with the injection named. But I

failed ; and ultimately was obliged to make a large incision, laying bare the cavity which I found underlying almost the entire bosom ; though the recovery was tedious, the patient completely recovered, and afterwards, in a subsequent pregnancy, nursed with this breast. I was thus taught a lesson ; and in the second instance, on the discovery of a deep cavity, laid it freely open, and with an equally satisfactory result as in the first case.

Reference to such cases will prove the necessity, when fistulous openings are found in the breast, of careful exploration with the probe. They also prove the uselessness of temporising, and will help to remind the practitioner that below what may appear to him to be 'the lowest depths' there are 'deeper still,' and that the only way to reach and treat these is by free opening, and careful subsequent healing from the bottom of the wound.

General Features of the Case.

Having thus carefully examined any case, whether of tumour or inflammation, the conditions of the other organs should be inquired into. If the case is one of suspected malignancy, the anæmic or cachectic look should, if present, be noted, and the cervical glands, the thyroid gland, the lungs and liver carefully examined. It is well also, if there are any indications of uterine disease, to examine the uterus. I now assume that a case of tumour of the breast comes to the practitioner for diagnosis ; he must keep before his mind, in forming an opinion, certain data to guide him. I may best convey these by placing them in tabular form :

DIAGNOSIS OF TUMOURS.

General Signs and Symptoms.

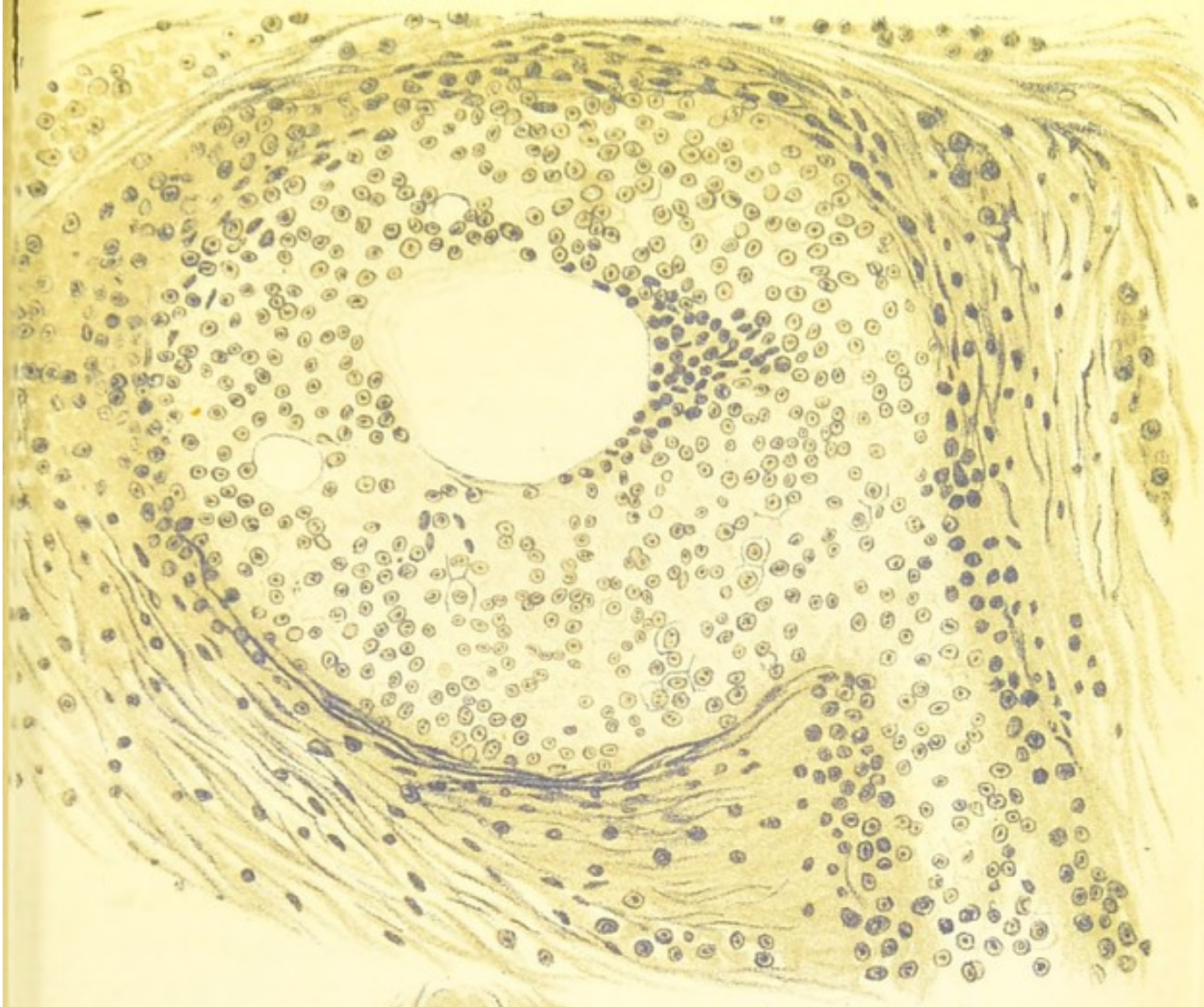
	BENIGN TUMOURS.	MALIGNANT TUMOURS.
Age.	May develop at any period of life, from ten years of age to over fifty; more frequently, however, after twenty and before forty. (The time of detection of a tumour, and the time of its development, must be distinguished: a woman may not discover the presence of a small and painless growth for a considerable time.)	Are detected more commonly from thirty to fifty; most frequent from forty to fifty. Of 238 cases recorded by Bilroth, 93 occurred during this decade; of 458 tabulated by Birkett, 193 were in the same interval; and of 273 cases observed by Velpeau, 95 were attacked at the same period of life.
Condition, Married or Single.	Occur both in married and single; but the proportion of cases occurring in single or sterile women is much greater than in the case of malignant disease.	More frequent, apparently, in married and prolific women. Bilroth, 236 cases, 213 married, 186 prolific; Birkett, 100 cases, 88 married, 73 prolific. (Bilroth rightly points out that the average proportion of unmarried to married women has to be remembered in reading these statistics, as also that of sterile to fertile women.)

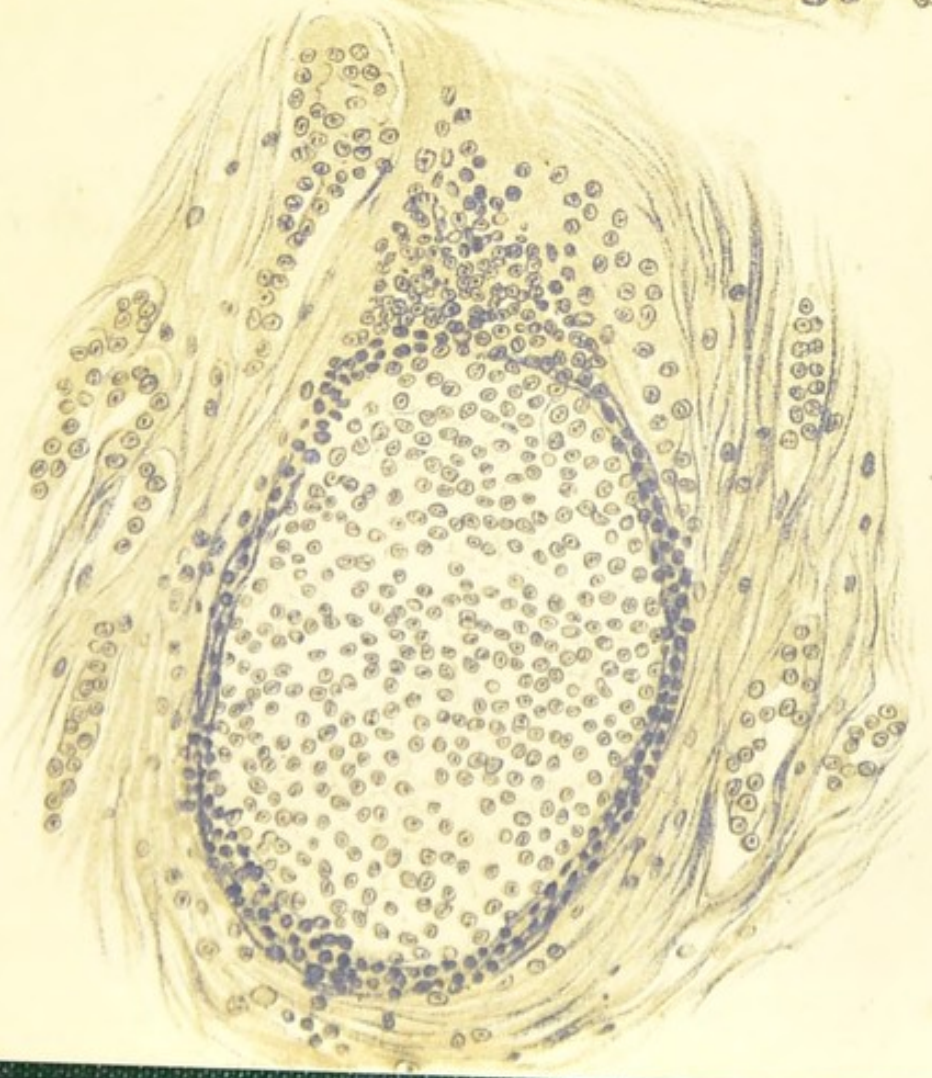
	BENIGN TUMOURS.	MALIGNANT TUMOURS.
Rapidity of Growth.	Varies. They generally are of slow growth, or, on attaining a certain size, they remain quiescent for a lengthened period. On the other hand, they may develop rapidly, and in a period of a few months attain to a comparatively large size; this increase of growth depends much on the nature of the tumour, whether cystic, fibrous, adenoid, or lipomatous.	Generally rapid; the rule being that malignant disease kills within three years from its inception. Yet there are striking exceptions to this rule. I have known instances of true scirrhus in which the tuber, or infiltration, has remained quiescent for some years before active symptoms made their appearance (Sir B. Brodie's case, twenty-five years).
Mobility.	Generally quite movable, rarely fixed. This free, or rolling, movement under the fingers is characteristic of isolated adenoid and cystic formations in the midst of the gland-structures. We do not find this mobility so well-marked in the case of lipoma.	Mobile only in the early stages. When the growth is of any duration, or has attained to any size, it is firmly fixed. In displacing the tumour we displace the gland.
Pain.	As a rule, not severe; if present and severe, it is more likely to be of a neuralgic nature, as in the case of 'painful mammary tumour,' radi-	Pain in the advanced stage is the rule, though there are exceptions. It is also severe when present; in some instances it is paroxysmal, and

	BENIGN TUMOURS.	MALIGNANT TUMOURS.
	ating in the course of the intercostal nerves, and greatly increased when the tumour is handled.	described as 'darting,' 'lancinating,' 'shooting,' 'burning.' Velpeau's description of the pain is accurate when he says it is 'plunging, deep-seated, constricted.'
Axillary Supraclavicular Glands.	Normal, not necessarily affected.	Enlarged and indurated.
Constitutional Symptoms.	As a rule none.	Generally present; they are the rule in the advanced stages; especially emaciation and cachexia.
Appearance of Mamma, and Physical Signs.	Skin not changed in colour, nor puckered; nipple, as a rule, not retracted, sometimes prominent. There is a fluid discharge at times of a serous or mucoid nature; the feel will depend on the nature, size, and position of the tumour, whether multiple in character or diffused, superficial or deep, a mere nodosity, or an alteration of all the gland-tissues. These benign growths are	Skin frequently (especially in the advanced stages) changed in colour, contracted, adherent, does not move over the tumour, nor can it be pinched up without dimpling; at times a sanious and offensive discharge from the nipple. The feel is generally of a fixed tumour, hard, lumpy, circumscribed, not rolling under the fingers, frequently imbedded in the gland-tissue, quickly involving

	BENIGN TUMOURS.	MALIGNANT TUMOURS.
	compact, often heavy (if they involve the entire breast), or nodulated, bossy, elastic; often they are round and movable, and are detected free in the tissue of the breast. Though heavy, they are, on the other hand, soft and lobulated, or impart the sense of fluctuation. This softness, feeling of fluctuation, or comparative hardness, will depend on the lipomatous, cystic, adenomatous nature of the tumour; and the idea is conveyed of isolation or diffusion of the growth according as it is encysted or otherwise. If the tumour be cystic, the aspirating needle or subcutaneous syringe may be used to decide the nature of the fluid — hydatid, serous, sanguineous, mucoid.	the skin; the bossy nature of the tumour will depend on its tuberculous or disseminated type. But these appearances must, to a great extent, depend upon the nature of the malignant growth. Encephaloid is soft, elastic, smooth, and more lobulated than scirrhus; more rapidly thinning the skin and setting up inflammation: it grows to a large size, often ending in fungus hæmatodes. Scirrhus, on the other hand, is stony, hard, inelastic, irregular, contracts and draws in the skin without thinning it. Ulceration occurs before there is great increase in size; the breast may even assume an atrophic change and become reduced in size, or appear shrivelled.
Whether Recurrence after Removal.	With the exception of those growths of a sarcomatous (fibroplastic) or adenosarcomatous type, seldom recur.	The rule is recurrence after removal.

While these general and differential attributes of the two great types of tumours are doubtless well marked in the majority of cases, still there are certain forms of both benign and malignant tumour in which nothing save the assistance we derive from the microscope, and the examination of the tumour microscopically after removal, will decide the question of malignancy. Such a case was the following recorded by the author, in the 'Transactions of the Academy of Medicine of Ireland, 1884.' The tumour was removed from a patient aged forty-four. It had first made its appearance in the year 1877. It gradually increased in size, and never gave any uneasiness to the patient until within the past few months. Of late it commenced to grow rapidly, and now there was occasional pain. The general health was otherwise good. The tumour was hard and lobulated. There was slight retraction of the nipple. One or two axillary glands were enlarged. The entire breast, with the affected axillary glands, was removed. The diagnosis was uncertain before operation as to the nature of the tumour. The sections, well shown in the drawing, appeared rather to confirm the view that the tumour was originally of an adeno-sarcomatous nature, and not, as was thought, scirrhus. The cystic type was well seen. The complex character of the tumour rendered its histological differentiation difficult. The cells filling the tubercles and saccules were very small and were not heterologous. All preserved the regular circular outline. The termination of a duct crowded with cells is shown in drawing No. 1. of plate. In parts the tumour had the appearance of a fasiculated sarcoma or fibroma. The tumour was removed early in August, 1883, antiseptically. The wound healed without the formation of pus. The painless nature of the growth and the very slow progress were against the supposition of carcinoma, but the





2

1000ths of an inch.

West, Newman & Co chr. lith.

Trans Roy. Lo

microscopical appearances when the tumour was cut into were in favour of scirrhus. The sections were made by Mr. George Walton.*

* The lady is at this date, December, 1884, in good health, and there is no sign of any return of the growth.

CHAPTER XXXII.

THE MAMMARY GLAND (*continued*).

Classification of Affections of the Mammary Gland.

Inflammation.

General hyperæmia.

(*a*) Acute—Subcutaneous (abscess).
Intraglandular ,,
Submammary ,,

(*b*) Chronic—Mammary ,,

(*c*) Traumatic Enlargements and Tumours—Result of contusions.

General hypertrophy.

Elephantiasis.

Adenoma { Painful mammary tumour. / Chronic mammary tumour. / Cystic.

Sarcoma { Adeno-sarcoma. / Cysto-sarcoma.

Cystic { Sanguineous. / Serous. / Sebaceous. / Mucoid. / Hydatids.

Lipoma.

Galactocele.

Malignant growths.

Scirrhus.

Encephaloid.
Melanosis.
Colloid.

Functional Disorders.

Galactorrhœa (excess of milk).
Agalactia (want of milk).

Disorders of Innervation.

Hyperæsthesia.
Neuralgia.
Suppression of milk,

Syphilis.

Primary sores.
Syphilitic cutaneous affections.
,, ulcerations.

Affections of the Nipple.

Hyperæsthesia.
Inflammation and abscess.
Areolar abscess.
Chaps and fissures.
Flattening.
Congenital anomalies.
Syphilitic sores.
Eczema.

Cutaneous affections.

Erythema.
Erysipelas.
Eczema.

The various other skin eruptions.

Some General Observations on Symptomatology and Treatment.

Inflammation.—Hyperæmic inflammatory states are more generally associated with lactation. A contusion may at any time give rise to inflammatory action, as, for example, during

pregnancy; but it is more particularly during the active discharge of the gland function, soon after parturition, that inflammation is apt to occur.

The death of the child may at any time necessitate sudden suppression of the milk. Again, at the time of weaning, when the child is first removed from the breast, it is liable to inflammation. But, perhaps, in ordinary practice, the more frequent complication which indirectly induces this state is sore nipple. The agony suffered by the mother, from the efforts of the infant to suck, prevents her nursing, and often leads soon after labour to the formation of a small areolar, if not to a more serious abscess,

The general symptoms of inflammation in a breast may be summed up thus. There is tenderness, increase of hardness and fulness at some part of the gland; this is followed by an arrest in the flow of the milk, which produces a congestion of the portion of the gland in which this arrest takes place. Judicious management and great care may anticipate the danger and restore the affected part to its normal condition; but if further stasis takes place, and inflammation sets in, there is greater increase in the hardness, attended with redness of the integument; perhaps the patient has a slight attack of shivering; the pain becomes greater, the breast is swollen and tense, redness extends, the skin becomes œdematous; the degree of the constitutional disturbance will depend on the amount of the gland involved in the inflammatory process. Sometimes it is very great, and is associated with general fever. The œdema is followed by softening; fluctuation is soon detected, and the pus either finds its own way to the surface or is evacuated by the knife of the surgeon. Much will depend on the position of the pus, whether the abscess form superficially or deeply. The deeper the abscess, the greater the difficulty of finding an exit, and the condition of things already de-

scribed is the result. In the superficial abscess the course of the inflammation is short; the pus points comparatively rapidly, pain is not so intense, and the patient, with any attention, quickly gets well.

In both the deeper kinds of abscess it is far different; the pain and constitutional disturbance are much more severe; sinuses and fistulæ are more likely to form; pus is more apt to burrow; the opportunity to open the abscess and evacuate the pus must be waited for, and the waiting is often tedious and disheartening to the patient. The general principles on which inflammations, both superficial and deep, must be treated, are sufficiently simple. They may be divided into *Preventive, Palliative, Operative.*

Preventive Measures.

(*a*) During pregnancy:

Attention to the nipples.

If flattened or sunken, the occasional use of a breast glass.

Proper clothing and avoidance of pressure.

Due support.

The use of eau-de-Cologne lotion, or tannic acid.

Glycerine and brandy, as an astringent application previous to parturition.

(*b*) After parturition:

Early application of the child to the breast.

Prevent the child from sleeping at the breast.

Change of the nipples in nursing.

Gentle frictions with oil.

The use of a breast-glass or nipple-shield.

Attention to the nipples.

Support.

Attention to over-secretion or congestion of milk.

Palliative Measures.

(*a*) Compression:

The use of belladonna and conium both in ointment and strapping; the application of leeches and warm sedative fomentations.

(*b*) The internal use of belladonna, conium, agaricin, ergot, iodide of potassium, alkalies, and saline purgatives.

(If there be arrest of the milk secretion, a poultice of fresh castor-oil leaves may be applied. Infusion of jaborandi may be given internally, or pilocarpine, or the decoction or extract of the castor-oil leaves, and preparations of malt. Moderate Faradisation may be tried.)

The child must not be allowed to suck an excoriated nipple; if there be any aphthæ present in the child's mouth, these must be attended to, and when the child is removed from the breast, great care should be taken to draw off the superfluous milk by means of a suitable breast-pump. If the nipples are fissured, they must be treated by such applications as solutions of nitrate of silver, flexile collodion, styptic colloid; lotions of tannic acid with glycerine, sub-acetate of lead, lime water, and compound tincture of benzoin, eau-de-Cologne, hazeline; weak chromic acid, carbolic acid, boracic acid solutions; the lotion of bismuth (ʒii.), calamine (ʒiv.), with oxide of zinc (ʒii.), and glycerine (ʒi.), in rose-water (ʒviii.), is an admirable one in eczematous conditions and where there is a discharging surface; Castile and larch soaps, or the compound larch soap, will be found useful to wash the breast with, and, when the nipple and breast have been gently washed with either of these, some light dusting-powder of fine starch, with bismuth, powder of acacia and calamine, or the ointment of oleate of lead and oleate of zinc, made with benzoated lard, may be applied.

As media for the employment of astringent remedies, the infusions of matico or catechu are useful. When there is severe fissuring of the nipple, the child must at once be taken from the breast, and a breast-pump used.

If inflammation threatens, and there is pain, the pigment composed of camphor (ʒii.), mastich (ʒii.), ext. belladonna (ʒii.), chloroform (ʒiv.), flexile collodion (ʒii.), is most soothing. It can be applied under a poultice or stupe of spongiopiline. Leeches often give relief, and may subdue inflammatory symptoms; salines should be administered; the breast should be supported and compressed by properly applied straps of Mead's adhesive plaster (Seabury and Johnson). It is the safer rule to fairly support the patient threatened with breast abscess. Quinine, bark and mineral acids, the effervescing salicylate of quinine, Dover's powder at night, plain but generous diet, are indicated. It should be remembered that much milk, malt preparations, and oatmeal foods, increase the secretion of milk. The administration of a stimulating and nutritious diet, or any lowering or tonic medicines, will in great measure depend on the acute or chronic nature of the inflammation.

Operative.

If from the condition of the skin and the degree of pointing we see that an abscess is inevitable, we must resort to warm anodyne fomentations and linseed poultices; the breast should be supported in a sling, fluctuations closely watched for, and if detected, or from the œdematous condition of the skin we suspect the presence of pus, the course for the surgeon to pursue is to make a free incision, and in the most dependent position. If sinuses follow, we may try such injections as those of iodine, carbolic acid, chloride of zinc, permanganate of potash; if they do not show a tendency to heal readily, it is best to incise them. The use of

poultices for too long a period should not be continued. When they are on, we may combine with the poultice some antiseptic, as carbolic oil or weak thymol ointment. After using poultices for a few days, and when discharge ceases, resort may be had to a piece of lint dipped in warm water, and protected by oiled silk, sufficient to cover the breast. If the abscess is deep-seated, and sinuses have formed, it is well, having vacuated the pus, to insert a piece of drainage-tube, which is carried with a drainage dressing-forceps to the bottom of the cavity; through this it can be washed out with any antiseptic or stimulating solution; if any drainage-tube be not to hand, a piece of catheter, as suggested by Velpeau, answers the purpose equally well. During the entire treatment the breast should be supported by either a properly adjusted bandage or strapping. It is in such severe cases that a generous diet is especially indicated. Here also we find that the administration of bark, quinine, Fellows or Easton's syrups, and other tonics, is necessary.

Treatment of Tumours.

The larger our experience of tumours of the mammary gland becomes, the more do we see the uselessness of trusting to external applications of any kind to dissipate them. Iodide of potassium, iodide of lead, iodine, the oleates of lead and mercury, discutient lotions of chloride of ammonia with camphor, combined with compression, are at times of use in the case of small nodosities, chronic indurations after inflammation, and small cystic growths; but they more frequently fail, and unless growth is otherwise arrested, the use of the knife is sooner or later called for. Lipomatous tumours, small cystic tumours, galactocele, adenomatous nodules, may remain for years, if not permanently, without growing or giving rise to any pain or even uneasiness. Yet this is not generally the rule. And all such growths cause

great uneasiness in the mind of the woman, and make her apprehensive and unhappy. I am not so certain that if the rule to completely remove any circumscribed growths from the mammæ, whether painful or otherwise, were generally acted on, we should not be on the safer side than to temporise with any.

Take what pains we may to reassure a patient as to the harmlessness of any form of breast tumour, there is a natural fear of malignant disease which tends to make her mind dwell on its presence. Also in the instance of cystic and sarcomatous growths, we know sufficient of their liability to assume a malignant nature to make us, even after years of quiescence, wish they were out of the way of harm. The surgeon is, perhaps, more often in doubt as to the expediency of removal of the mere growth or of the entire mammary gland. His decision must depend on the homologous or heterologous character of the tumour, its size, hardness, the puckering of skin, rapidity of growth, the extent of the gland involved, and the other features which make him suspicious of its malignant or sarcomatous nature. Small, circumscribed, and encysted tumours of a benign type may be carefully removed; but if there are any reasonable grounds for apprehension that the disease is of a malignant nature, or likely to become so, or, again, that the tumour is of any large size, the best course is to amputate the breast. Encysted tumours containing fluid may be incised, and the cyst cavity treated with some stimulating fluid, as solution of iodine, carbolic acid or chloride of zinc. The nature of the fluid may be determined on previously, by drawing off a small quantity with a hypodermic syringe, and examining it so as to ascertain whether it is serous, hydatid, or sanguineous. Hydatid tumours must be removed. *The one safe rule in all cases of malignant growth of the breast is early amputation of the entire breast.* If the axillary glands are

enlarged, these should be carefully removed at the same time, and the entire axilla cleared of all suspicious nodules. The association of eczematous inflammation of the nipple and malignant disease (Paget) must not be forgotten. In a well marked case of this nature, exhibited by me at the Pathological Society of London in 1881, the woman had suffered for over two years from excoriation of the nipple, and when she was admitted to hospital there was an area of the cir-

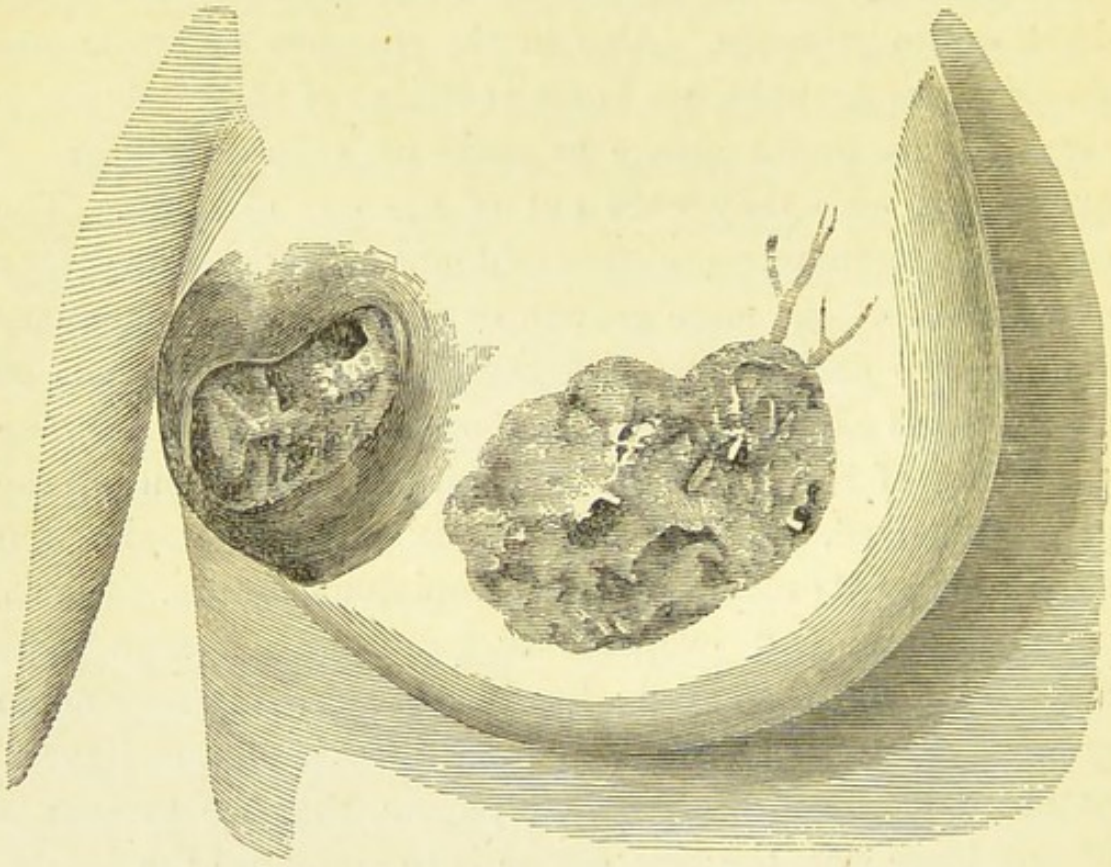


FIG. 200.—Eczema of Nipple, with Scirrhus Mass.

cumference of a crown-piece, including the nipple, of eczematous ulceration (eczema rubrum). Close to the axilla was a hard mass of scirrhus, which had ulcerated, leaving a raw surface with the vivid red colouring of malignant ulceration. I removed in this case the entire bosom, the incision being about ten inches in length, so as to include the entire of the scirrhus infiltration near the axilla. I dissected away all the glands and exposed the entire axillary vessels and nerves

from the apex to the floor of the axilla. The entire dissection of the axillary structures was as clean as if the part was prepared for demonstration. Yet in one year after the operation the patient returned to hospital, with a huge fungous mass protruding in the side of the wound. (This specimen is in the museum of the Queen's College, Cork.) Only in one instance of extensive scirrhus have I operated in which there was no return of the tumour. The patient died of an acute attack of inflammation of the lungs about two years after the operation, and the breast had given her not the least uneasiness up to the time of her death. Yet it might have developed subsequently. We may decide the question of operation on these grounds :

(1) The size of the tumour and the degree of infiltration of the mammary tissues ; the extent to which the skin is involved, as well as the condition of the axillary glands.

(2) The general health of the patient, and the co-existence of malignant disease elsewhere, or of other serious constitutional disorders, as phthisis or uterine disease.

If we determine not to operate, we must palliate and relieve pain to the best of our ability by such means as compression, anodyne applications, as opium, belladonna, conium, and hyoscyamus, in the form either of fomentation, ointment, or strapping, while both morphia and atropine may be administered subcutaneously.

In conclusion, I would say, in regard to any malignant or suspected malignant tumour of the breast, 'Remove early, remove the entire breast, sufficient skin, and all suspicious tissues and lymphatic glands.'

Amputation of the Breast.

Perhaps there is no operation in which the benefit of antiseptic surgery is more perfectly illustrated than in this.

Union by first intention is the rule. To secure this result we should :

Arrest hæmorrhage by torsion, which, if properly carried out, and the wound not closed until all bleeding has ceased, I find is quite efficacious, and there is little fear of any secondary hæmorrhage.

If ligatures are used, let them be of carbolised gut.

Operate with every antiseptic precaution, and dress with drainage-tube and the usual antiseptic dressings.

Use silver sutures or catgut to unite the margins of the wound ; remove a few of these if there be any undue tension within forty-eight hours after the operation.

Dress subsequently, and daily, under some antiseptic spray, *until the wound has healed.*

When the wound is healing, cover it with a weak thymol or benzoated dressing and a thymol pad.

APPENDIX I.

SUMMARY OF SOME OF THE PRINCIPAL FOREIGN AND HOME SPAS, AND HEALTH RESORTS.*

(THE nature of the water is roughly given, and the situation.)

SPAS.

Name.	Use and Character of Water.	Situation.
	Affections of the Skin.	
Aix-la-Chapelle...	Alkaline and alkaline earths; also sulphates	Rhenish Prussia
Aix-les-Bains ...	" "	Savoy
Barèges	Sulphurous	Hautes Pyrénées, France
Harrogate ...	Various sulphur spas; also iron and saline	Yorkshire
Kissingen ...	Saline (chlorides) ...	Bavaria
Kreuznach ...	Saline; strongly iodized; mud baths ...	Rhenish Prussia
La Bourboule ...	Highly arsenical ...	Puy de Dôme, France
Lisdoonvarna ...	Sulphur, etc.	Ireland
Marienbad ...	Saline (with iron) ...	Bohemia
Tarasp	Sulphates and alkaline	Lower Engadine
Vals	Alkaline and alkaline earths (bicarbonates); various spas ...	France
Vichy	" "	Central France

* The author by no means intends this list as a complete one. It contains most of the important European health resorts, but necessarily does not include several widely known spas and resorts. It is taken from his work on the 'Health of the Senses,' 2nd Edition.

SPAS—*continued.*

Name.	Use and Character of Water.	Situation.
	Liver.	
Aix-la-Chapelle...	Alkaline and sulphates	
Bath	,, ,,	Somersetshire
Bilin	Alkaline (carbonates)	Bohemia
Buxton	Various spas	Derbyshire
Carlsbad ...	Alkaline ; soda salts...	Bohemia
Cheltenham ...	Various spas	Gloucestershire
Ems	Alkaline	Germany
Harrogate		
Homburg ...	Alkaline, with iron and sulphur	Central Germany
Kissingen ...	Saline (chlorides)	
Lisdoonvarna ...	Sulphur, etc.	Co. Clare (Ireland)
Marienbad ...	Saline (with iron)	
Strathpeffer ...	Sulphur and sulphates, etc.	Ross-shire
Vals	Alkaline and alkaline earth (bicarbonates); various spas	
Vichy	,, ,,	
Wiesbaden ...	Saline (chlorides) ...	Nassau
	Urinary Organs.	
Carlottenbrunnen	Chalybeate	Silesia (whey cure)
Carlsbad... ...	Alkaline ; soda salts	
Contrexville ...	Alkaline	Vosges, France
Ems	Alkaline	
Harrogate ...	Various sulphur spas ; also iron and saline	
Homburg ...	Alkaline, with iron and sulphur	
Kissingen ...	Saline (chlorides)	
Manheim ...	Saline	Near Frankfort
Vals	Alkaline and alkaline earth (bicarbonates) ; various spas.	
Vichy	,,	
Wildungen ...	Alkaline	Waldeck

SPAS—*continued.*

Name.	Use and Character of Water.	Situation.
	Glandular Organs (Strumous Affections.)	
Bonnes	Sulphurous	Basses Pyrénées
Kreuznach ...	Iodized ; chlorides	
Leamington ...	Chlorides	Warwickshire
Leuk	Sulphates, etc... ...	Switzerland
Marienbad ...	Alkaline	
Sankt Moritz ...	,,	Switzerland
Tarasp	,,	,,
	Special for Impoverished Blood.	
Bath	Ferruginous	Somersetshire
Franzenbad ...	... ...	Bohemia
Pyrmont... ...	Ferruginous	Waldeck
Schwalbach ...	,,	Nassau
Spa	,,	Belgium
Stahlbrunnen of Homburg ...	,,	
Tunbridge Wells	,,	Kent
Vals	,,	
	Special Affections of Women.	
Adelheidsquelle	Salts, with iodine and bromine	Bavaria
Bourboule ...	Highly arsenical	
Ems	Alkaline	
Kissingen ...	Saline (chlorides)	
Kreuznach ...	Saline ; strongly iodized ; mud baths	
Neundor... ...	Sulphates and saline ...	North-west Germany
Pyrmont ...	Alkaline and sulphates	
Schwalbach ...	Ferruginous	
Woodhall ...	Bromine and iodine	Lincolnshire

Aperient.—Of the simple aperient waters the most useful are—Friedrichshalle, Pullna, Hunyadi Janos, Carlsbad, Victoria.

	Joints, Rheumatism, etc.	
Aix-la-Chapelle...	Alkaline and alkaline earths	
Aix-les-Bains ...	Alkaline and alkaline earths, and sulphates	

SPAS—*continued.*

Name.	Use and Character of Water.	Situation.
Baden	Saline and sulphurous	Near Vienna
Baden-Baden ...	Special lithia waters—saline, chlorides	
Barèges	Sulphurous	Hautes Pyrénées
Bath		
Bourboule ...	Arsenical	
Buxton		
Droitwich ...	Brine baths	Worcestershire
Eaux-Chaudes ...	Sulphur springs	Basses Pyrénées
Kreuznach		
Lisdoonvarna		
Manheim ...	... ...	Near Frankfort
Mont Dore ...	Alkaline	Puy de Dôme
Strathpeffer ...	Sulphurous, etc.	
Tarasp		

Spa Waters Imported.—Apollinaris, Bilin, Lithia, Æsculap, Kreuznach (Mother-lye, can be had imported for baths), Kissingen, Harrogate, Contrexville, Vichy, Vals, Bourboule, Ems, Rosbach, Neundorf.

HEALTH RESORTS.

Lungs.

Algiers	Winter	North Coast of Africa
Balearic Islands	Spring and summer ...	
Bournemouth ...	More especially winter	
Cannes	Winter	Riviera
Colorado* ...	Summer and winter ...	Central North America
Davos Platz ...	Winter and summer ...	Valley of Grisons (4,805 feet)
Eastbourne ...	More especially winter	
Eastern Spain ...	Winter	
Eaux-Bonnes ...	„	Basses Pyrénées
Egypt	„	
Glengariff ...	More especially winter	
Hastings ...	„ „	

* This famous health resort of the Rocky Mountain Range, for consumptives, is one of the finest in the world.

APPENDIX II.

DYSMENORRHŒA.*

Spasmodic Dysmenorrhœa.—There is a variety of dysmenorrhœa which has been called spasmodic, and in which it is assumed that spasm of the uterine muscular fibres around the isthmus uteri plays the most important part in the production of the pain. We are all familiar with the ideas associated with the term 'obstructive dysmenorrhœa.' I speak of 'obstructive' as distinct from 'atresic'—*i.e.*, more or less of mechanical obstruction to the menstrual flow due to congenital or acquired contraction or partial occlusion of the uterine canal. I do not refer to atresia of any part of the genital tract, whether of Fallopian tube, uterus or vagina, or imperforate hymen. The two conditions must always, both for etiological and clinical considerations, be kept distinct. The forms congestive and obstructive touch each other closely, both from a pathological and clinical point of view. Congestion leads to obstruction. Impediment to free flow tends to congestion. Contraction of the uterine canal is a result common to both the congestion that follows a version and flexion, a hyperplastic effusion, a growing fibroid, an inflammatory state of the endometrium. More of the nature of an obstacle to discharge is the presence of a small polypus. Traumatic contraction gives us the same results when it occurs from operative interference or rash therapeutical

* Communication to the Obstetrical Section of the Academy of Medicine in Ireland (Session 1883-4).

applications. These varieties of dysmenorrhœa are, I think, rightly distinguished from that which is the consequence of stenosis associated with congenital malformation of the uterus, giving us the characteristic conical cervix and pin-hole aperture, or any of its varieties, or the imperfectly developed uterus with short cervix. Yet, as we are classifying a symptom and not a pathological condition, we must be satisfied to include this frequently occurring misfortune under the heading of 'obstructive.' Obviously it is scientifically inaccurate.

For my part I prefer the classification of dysmenorrhœa as given below.

Ovarian	Congestive (*a*) Neuralgic (*b*)
Uterine	Congestive (*a*) Obstructive (*b*) Inflammatory (*c*) Due to congenital malformation (*d*) Due to flexion of uterus (*e*) Due to blood states (*f*)
Atresic	Atresia of Fallopian tube ,, uterine canal ,, vagina ,, vulvar orifice

Membranous—A special form of uterine dysmenorrhœa.

Thus, uterine 'congestive' would include simple congestive conditions, plethoric states; 'obstructive,' such impediments as polypus and fibroid tumours, traumatic contraction; 'inflammatory'—endometritis, metritis; congenital malformations, causing stenosis of os and cervix; flexions and versions, causing stenosis; blood states, as anæmia, chlorosis, and other depraved conditions.

Now it is noticeable that I have not included here a sub-

division under the title of which this paper is written. And this brings me to these questions—

1. Is there such a distinct cause of the dysmenorrhœa in uterine spasm as to warrant our regarding this uterine contraction as a special form of painful menstruation, and either pathologically or clinically distinguishable from other forms ?

2. Is it correct to assert that the pain has its source altogether in the uterine spasm and not in the mechanical effects of congestive closure, contraction of the canal from flexion, or congenital stenosis ?

The truth of the mechanical theory of the pain of dysmenorrhœa has been altogether disputed by our very eminent Scotch gynæcologist, Dr. Matthews Duncan. A glance at his work on 'Diseases of Women,' and a perusal of the characteristically vigorous language with which he disputes the mechanical source of the pain, and obstruction as a cause of the dysmenorrhœa, will satisfy anyone how settled are his views on the subject. Briefly Dr. Duncan's view may be summarised thus :—

'The most characteristic form of dysmenorrhœa is spasmodic ;' it is 'of the nature of a neurosis ;' is synonymous with neuralgic, and is 'in its essence' due to 'morbid contractions of the uterus, occurring in connexion with menstruation.' These contractions are clonic ; they 'come in pangs,' and when the pain is incessant it is because the uterine contraction is tonic. He regards as analogous diseases the after-pains of pregnancy and spasmodic asthma. 'Nothing can be more erroneous,' he thinks, than the statement 'that flexion of the passage obstructs the discharge of blood.'

He is satisfied that it is bad pathology that regards an extreme flexion as the cause of damming up of blood in the body of the uterus, and the usual consequences that follow

from such blood accumulation. The fact that a woman has not violent dysmenorrhœa after the first two days of menstruation as a rule, Dr. Duncan looks on as subversive of the mechanical theory. Its periodicity and the influence of climate on the pain, he thinks, still further upset the obstruction theory. In short, he ignores the influence of flexion, version, pin-point os uteri, stenosis in producing the dysmenorrhœa. If these views be correct, obviously much of the modern teaching is erroneous, and must be abandoned. I have to confess that Dr. Duncan's reasoning has not so far convinced me. I rather see in spasm a *consequence* of a pathological condition.

There still is, to my view, a strong analogy between the pain in urethral obstruction, the result of urethral congestion, strictured conditions, gouty urethritis, and in gonorrhœal inflammation, as in the cervical canal it is not necessary that there should be any considerable contraction to produce spasmodic closure. We can pass a large-sized bougie through the urethra of a patient who a minute before could not pass a drop of urine. The pain is the pain of retention. Even though there be recurrence of the spasmodic condition when we remove the obstruction (in this case some congestion and spasm) the pain disappears.*

Then we have the irritation of a gouty blood current

* I am quite aware that various degrees of flexion are at times to be met with in women who have never suffered from dysmenorrhœa. I have very recently seen such a case. A lady, aged thirty-one, married nine years ; two early abortions shortly after marriage ; has continued regular both in quantity and periodicity of discharge since ; has never since she was sixteen been irregular, nor has she at any time suffered pain. Her husband, a medical man, induced her, for the first time, to submit to an examination to ascertain if there existed any cause for the sterility. She is highly nervous. On examination I found a rather sharp anteflexion of the uterus, which was evidently of old standing. I could only make a digital and bi-manual examination, but I was able to satisfy myself that the uterus was not enlarged, nor was it sensitive. The os was normal. Here the flexion had not caused congestion, or obstruction, or apparently any local derangement of the uterine nerves.

causing spasmodic closure of the urethra, and producing obstruction. It is periodical, and is relieved by diet and hygienic measures. But even if there be no considerable obstruction, and simply an abnormal condition of the tissues and nerves of a sensitive part, acute reflected pain may occur elsewhere. Witness severe urethral pain with hæmorrhoids and remote pains in the extremities from stricture of the urethra. In asthma, instanced by Dr. Duncan, the pain or distress is distinctly caused by the impeded blood current, and we have to look altogether beyond the phenomenon of spasm for the proximate cause of the obstruction. It is true that certain uterine contractions are painful, but all are not so, as, for example, the contractions of the uterus which occur throughout pregnancy, and which the woman is unconscious of. These are purely physiological contractions; they are not the pathological ones of the patient suffering from dysmenorrhœa, or, for the matter of that, the after-pains of labour, in which we often have obstruction, and where there is a foreign body to be expelled. But are they morbid? Are those of labour morbid?

In those very exceptional cases in which we can on examination find no abnormal state to explain the dysmenorrhœa, we may feel certain that it is for the simple reason that we have not been able to discover it. The subtle relationship of ovary and uterus is sufficient to account for sympathies and reflex acts that we can find no physical explanation of. Even Dr. Duncan will allow that it is the exception to meet any severe case of spasmodic dysmenorrhœa without some attendant abnormal state of the uterus or ovary to explain it. Malformed cervix, contracted cervical canal, congenitally small uterus, and one in which a healthful act of ovulation fails to find its external physiological expression in the proper menstrual flow; the glairy plug of endometritis; the uterus flexed, hyperplastic

and hypertrophied, or imprisoned by a cellular effusion—all are found associated with the spasm. For these and other reasons, which I do not stay to give here, I believe the term 'spasmodic dysmenorrhœa' to be misleading and unscientific. I still adhere to the opinion I have always expressed to students, that spasm is an accessory symptom in most forms of dysmenorrhœa. That it accompanies the pain is true, but that it is the consequence of the depraved blood, the irritable nerve, the abnormal tissue, the contracted canal, the mechanical obstruction of polypus and fibroid, and the inflamed endometrium, is likewise true. But when we come to ask what light does treatment throw on this affection, I think every therapeutical step we take tends to prove the obstructive theory. Dilatation of the canal by tent or bougie, division of the cervix, and the posterior section of Sims, the relief afforded by galvanism, by suitable intra-uterine stems, by such a medicine as apiol, and various other therapeutical means—all tend, I maintain, to support the older view of this diseased symptom being the consequence of any or several of the pathological states before referred to.

Mechanical dilatation for this 'non-mechanical' condition Dr. Matthews Duncan heartily advocates. Here I quite agree with him. And I believe that in suitable bougies we have the most perfect means of securing safe and rapid dilatation of the uterine canal. The bougies I have devised possess these advantages over Hegar's :

1. They are easier of insertion and of manipulation.

2. The momentum gained by the weight of the metal is of advantage.

3. They can be moulded to any shape at the will of the operator.*

I believe the time is approaching when tents, sea-tangle, and tupelo will be entirely discarded for forcible dilatation.

* I have altered the screw joint in the handle by substituting a bayonet joint. This will be found to work better.

APPENDIX III.

ALEXANDER'S OPERATION.

(*Shortening of the Round Ligaments.*)

A REVIEWER of the first edition of this work remarked that I had not referred to Dr. Alexander's original and ingenious proposition to treat certain cases of prolapsus uteri and retroversion by the operative procedure of shortening the round ligaments. I was, of course, cognisant of this operation at the time that I wrote the chapters on uterine displacements. I did not, however, know sufficient of its practical application to advise it, either from personal experience or as an accepted surgical step. Now, however, I am convinced that it would be a serious omission not to refer to this operation; and though as yet no case urgently demanding its performance has come under my observation, still, I should not, in a suitable case, hesitate to adopt it.

The grounds on which the operation is advocated are almost obvious to anyone who reflects on the anatomy of the broad ligaments and the effect produced on the uterus in the dead body by traction on them.

Like other anatomical teachers, I have long since frequently demonstrated, in the dissecting-room, the anatomical connection of the broad ligaments and their relation to the uterus by pulling on the ligaments with a forceps. I have long thought and taught that we did not give these

ligaments that credit for the part taken by them in the support of the uterus which they are entitled to. In the same way I have been in the habit of ascribing a characteristic pain, which is complained of in various uterine disorders, and which runs in the course of the round ligaments, to the direct tension exercised on these sensitive props, or to sympathetic and reflex irritation of the nerves accompanying and supplying them.

Dr. Alexander, struck with the insufficiency of pessaries in many cases of prolapsus and retroversion, determined to try the effect of raising the uterus and fixing it by means of the round ligaments.

His first operation was performed in December, 1881.* Since then he has operated on twenty-two cases, and many other surgeons have performed the operation with considerable, and in many cases complete, success.

The operation, in the words of Dr. Burton, of the Liverpool Hospital for Women, is 'simple, generally easy, bloodless, and harmless.'

Dr. Alexander rightly insists that the operation is one proposed to rectify displacement and maintain the uterus in a replaced position. It is not intended as a cure for all the antecedent or attendant and many of the consequent ills from which women suffer, who have also displaced uterus.

I give the stages of the operation as described by Dr. Alexander himself:

'The patient should have her bowels and bladder emptied, and be put under chloroform or ether. The pubes are shaved on either side from the spine outwards. The pubic spine is felt with the fingers, and an incision made

* See 'The Treatment of Backward Displacements of the Uterus and Prolapsus Uteri by the New Method of Shortening the Round Ligaments,' by Wm. Alexander, M.D., etc. Churchill: London, 1884.

upwards and outwards from that point, from one to two inches in length, in the direction of the inguinal canal.

'The greater or less length of the incision depends on the amount of fat that covers the abdominal parietes. In thin subjects, and by experience in the operation, the length of the incision may be much lessened. By subsequent incisions the depth of the wound is increased until the tendon of the external oblique muscle is reached.

'The external abdominal ring is now to be looked for, and if not at once seen, will be easily found by searching for the oblique fibres crossing it, and for a small morsel of fatty tissue issuing from its inner end. In some cases the external ring is so well concealed, that inexperienced operators have some difficulty in finding it. The pubic spine, the oblique fibres that cross the external abdominal ring, and the fatty protrusion at its inner end, are the landmarks that will readily guide the operator who has a fairly practical knowledge of the anatomy of that region. In the first incision a small artery (the superior external pudic) is sometimes cut across. It is the only vessel in danger. As a general rule the operation is bloodless.

The oblique fibres crossing the external abdominal ring should next be cut across in the direction of the inguinal canal. A reddish tissue now bulges out, so characteristic in appearance as to be easily recognised, mixed with a greater or less quantity of fat. This is the end of the ligament, *as a ligament*, just before it spreads out in the mons veneris. An aneurism-needle is now passed under *all* this fatty mass, so as to raise it out of the canal and allow it to be grasped by the fingers (not by the forceps).

'We have now reached the most delicate part of the operation. The ligament should be gently pulled out, and all bands connecting it to the pillars of the external abdominal ring or to the neighbouring structures should be

cut through. The accompanying nerve should also be cut across. In tearing the ligaments from their inguinal connections, some risk is run of breaking them or of tearing them away altogether, unless much care, patience, and judgment be exercised. As soon as these adhesions are overcome no further trouble is experienced. The ligaments pull out with the greatest ease, and appear as white, strong, substantial cords.

'Having ascertained that both ligaments will run, the uterus should be placed in the desired position by the *sound*, and maintained in that position by an assistant, whose finger also touches the uterine cervix. The ligaments are now pulled out until they are felt to control the position of the uterus.

'When the ligaments are pulled out to the required extent, they are held by an assistant while the operator fixes them to the pillars of the external ring and to the edges of the wound in the following manner:

'A needle threaded with strong silver wire is passed through the skin on one side of the wound, through the most adjacent pillars of the external abdominal ring, and through the deepest part of the round ligament, through the opposite pillars of the ring, and finally through the skin on the opposite side of the wound. Another needle is passed through the same structures internal to the first one, and on rare occasions a third may be used. The depths of the wound are sponged, and the silver wire loosely fastened in a knot, bringing the edges of the wound together without constricting any of the tissues. The opposite side is then treated in the same way. The "slack" of the ligaments, if not severely handled, may be packed in the inner end of the wound, or may be cut off if it looks much frayed, and in either case the rest of the wound is closed with catgut sutures passing through the slack of the ligaments. I

am inclined to agree with Dr. Imlach, that silver wire is unnecessary. Catgut is strong enough, and the wounds seem to heal more readily when the skin is not involved in the deep sutures.

'In hospital I use the gauze-dressing and the spray during operation, but this is unnecessary even there, and the operation can be performed under any kind of *surgical* treatment, or with all varieties of surgical dressing.

'I now place a suitable Hodge pessary in the vagina and withdraw the sound. In the last three cases I also placed an india-rubber inflating pessary in the rectum. This could not be borne in one of the cases; in the other two it was of material benefit in keeping the womb forwards during the healing of the wound. I would not, however, recommend it to be often tried. The patient's knees are flexed over a pillow, as after operation for hernia, and a morphia and atropine injection, if necessary, is given to relieve pain.

'The subsequent dressings depend on circumstances, and may be few or many, according to the amount of discharge. The wounds rarely heal by the first intention, owing to the strain on the stretched ligaments and the restlessness of the patients.

'The prone position would be indicated after this operation, but the wounds are in front, and I have found it hitherto impossible to get the patients to adopt that position or to maintain it. I sometimes get them to lie well over on their side instead of on their face, and this relaxes the strain a good deal in some cases; in others it caused a pain on one side, so that the dorsal decubitus is the best.

'When the wounds are healed I allow the patient to move about with the pessary *in situ*. In the course of a week or two I remove the instrument, and the patient passes entirely from under control.'

APPENDIX IV.

DEMONSTRATING VAGINAL SPECULUM OF THE AUTHOR.

THE desirability of having such a speculum as would enable the surgeon to demonstrate to a student or students the os uteri and infra-vaginal cervix, in a different manner from that now adopted, and without exposure of the patient, often struck me in hospital work. By such an appliance as that made for me by Messrs. Maw, Son, and Thompson, this can be perfectly achieved. The drawing (Fig. 201) shows the appliance attached to a speculum. It consists of a nickel-plated steel bracket with three joints, as shown in the figure, which are so constructed as to enable the mirror to be placed at any angle or plane to the orifice of the speculum, from which it is twenty-five centimetres distant. A ring with a groove receives the mouth of the speculum, and will fit any large-sized speculum. The ring is clamped by means of a screw. (This clamp I am having improved.) But this may be so arranged that any sized ring can be applied so as to embrace a smaller speculum. At the other end of the bracket is a mirror, which works in a universal joint. It is three inches in diameter. If it be wished to get a magnified image, a slightly concave mirror can be attached. The entire appliance is shown folded in Fig. 203. It fits into a leather case, and is quite portable.

By means of this instrument the lips of the os uteri can

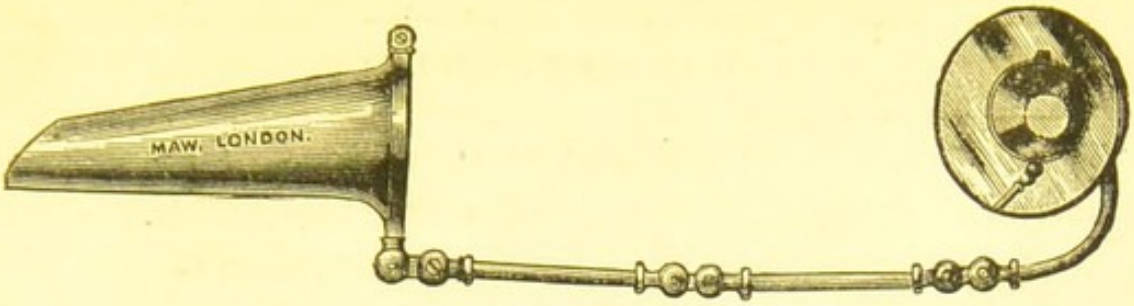


Fig. 201.—Demonstration Speculum of Author ($\frac{1}{4}$-size).

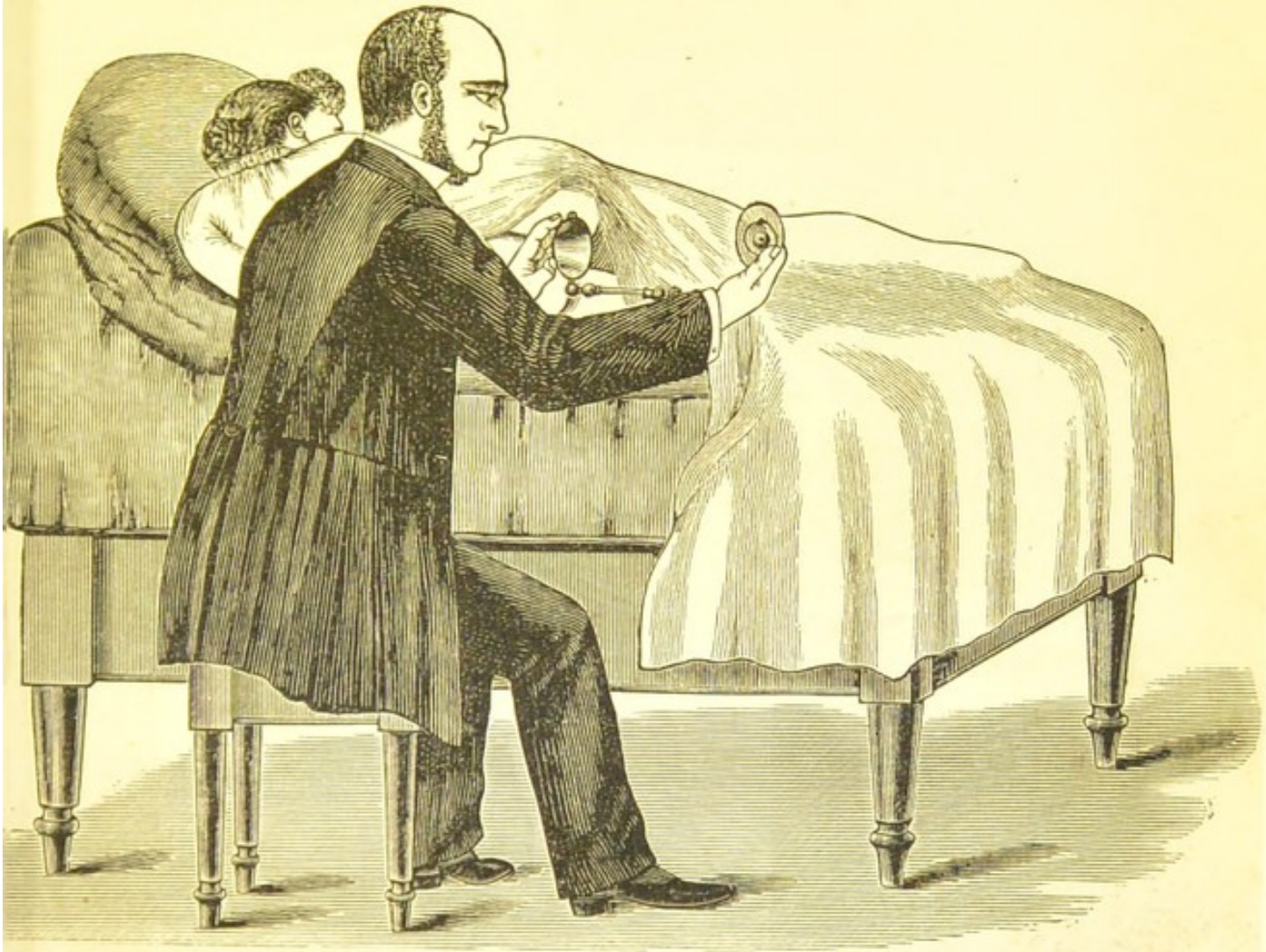


Fig. 202.—Shows application of Speculum.

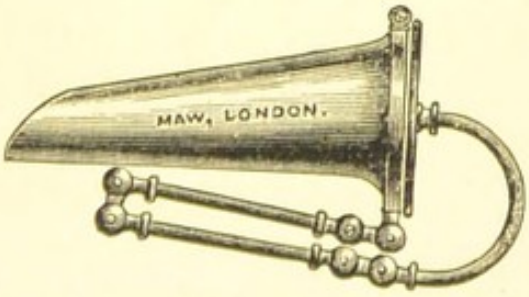


Fig. 203.—Appliance folded ($\frac{1}{4}$-size).

To face p. 456.

be seen, either by sunlight or artificial light, several feet away. The patient need not be in the least exposed during the demonstration. The teacher having introduced the speculum, and having caught the reflection of the uterus at the plane required, turns the mirror so that anyone standing behind him or at the side, and looking into it, can see both the os uteri or any application which is made to it. It is not necessary to expose more than the orifice of the speculum.

INDEX.

ABDOMEN
examination of, 54, 55
enlargements of, 328
phantom tumour of, 45
shape of, 54
skin of, 54
Abdominal regions, 55
Abortion, 28
cause of endometritis, 234
perimetritis, 254
parametritis, 259
pelvic hæmatocele, 273
subinvolution, 238
caused by uterine sound, 112
Abscess
pelvic, from parametritis, 260, 264
perimetritis, 255, 257, 259
hæmatocele, 276
of vulvo-vaginal gland, 3, 372
Age
in diagnosis, 27
Alexander's operation, Appendix iii., 450, 455
Amenorrhœa, 101-114
diagnosis, 102, 103
causes, 101, 102, 104, 105
treatment, 106, 107, 109
varieties, 102
primary, 101
secondary, 101
galvanism in, 112, 113
medicines indicated in, 108-111
wines in, 107
general hygienic rules, 106
Amputation of cervix uteri
for cancer, 303
of uterus for inversion, 216
Anæmia and chlorosis, 102, 104-108 120, 122
Anæsthetics in diagnosis, 45, 47, 62
bichloride of methylene, 46
chloroform, 46
chloramyl, 46
ether, 46
Clover's inhaler, 46
Junker's inhaler, 46
Angioma urethræ. See Urethra.
Appliances required for examination of a case, 26-74
Ascent of uterus, 206
Ascites
differentiated from ovarian dropsy, 333
complicating ovarian tumours, 325, 339
Aspirator in diagnosis, 47, 62, 78, 82
use of, in pelvic abscess, 259
in hæmatocele. See Hæmatocele.
in closure of vagina, 359
Atresia
of Fallopian tube, 315, 386
uterus, 355, 356
vagina, 355, 359
vulva, 358
Atrophy
of the ovaries, 316
Atthill's cannula, 76
Avulsion, 288
of fibroid tumours, 288
of polypus, 219

Barnes, Robert. See List of Authorities

Baths, 29
in amenorrhœa, 108
dysmenorrhœa. 130
endometritis, 233
subinvolution, 240
vaginitis and vulvitis, 379
Battey's operation, 129, 289
when indicated, 289
table of results, 289
Bed or couch, 31
Bimanual examination, 58, 59
in anteversion and anteflexion, 142, 155
in inversion, 60
in retroflexion, 179
in retroversion, 168
with sound, 60, 61
Bladder
interfered with by displacements, 17
irritability of, 383
calculus in, 5, 57
changes in position, 17
Blistering of the cervix uteri, 239
Broad ligaments, 16, 17

Cancer, 294-314
of cervix, 294
of body of uterus, 310
of vagina, 364
of vulva, 366
Caruncle
vascular, of urethra, 382
Catarrh
of cervix uteri, 227
Catheter
method of passing, 4
self-retaining, 200
Cauliflower excrescence of uterus, 296
Caustics
producing atresia, 95
Cautery
galvanic, 79
Paquelin, 78
Cellulitis, pelvic. See Parametritis.
Cervical mucus
character, 20
Cervix
chronic inflammation of, 227
Cervix—*continued.*
conoidal, 18, 19
congenital stenosis, 20
cystic degeneration of, 257
ectropion of, 206
elongation of, 184, 185, 205
erosion of, 247
flexions of, 153
follicular degeneration of, 251
granular degeneration of, 247
hypertrophy and hyperplasia of, 203, 236
incision of, 16, 79
in pregnancy, 19
laceration of, 241-246
depletion of, 76
antero-posterior division of, 79, 151
bilateral division, 80, 81, 151
conical, 9
hypertrophy of,
in prolapsus, 184
Charcot, on hysteria, 117
Chian turpentine in cancer, 304
Chlorosis. See Anæmia.
Chromic acid
application of, 308
to cervix, 307
Chronic
cervical endometritis, 230
corporeal ,, 233
parenchymatous metritis, 236
Climacteric, 27, 99, 133
Clitoris, 4, 5
hypertrophy of, 4, 5
removal of, 4, 5
Coccygodynia, 384, 385
Collodion, 249
Colpitis. See Vaginitis.
Colpo-perineorrhaphy, 196
Condylomata, 365
Conjoined manipulation, 58-61
Constipation
aperients in, 123
Countenance in ovarian dropsy, 53, 332
in malignant disease of the uterus, 301
Curette, 252
Cutaneous affections, 431
Cystocele, 184

Cystomata
ovarian. See Ovarian Cysts.

Depletion of cervix, 76
Diabetes
pruritis, 392
ophthalmoscope in diagnosis of, 392
digital examination, 56, 57
Dilatation of cervix
by graduated bougies, 51
by Barnes's hydrostatic bags, 72
Hegar's dilators, 52
by Lawson Tait's method, 52
by Priestly's dilator, 52
by tents, 48
Discharges, 30, 63
air, 69
character of, 30, 63
classification of, 63
mucous, 64
nature of, 63
source, 63
hæmorrhagic, 66-68
watery, 63
purulent, 65
gonorrhœal, 351
fœtid, in cancer. See Cancer.
sebaceous, 65
Douche
uterine and vaginal, 133
Douglas's pouch
situation, 11
collections of fluids in, 11
tumours in, 11
examination of, 11, 12
Dropsy
ovarian, 316
Fallopian tube, 315
of amnion, 329
Duncan, Matthews. See List of Authorities.
Dyskinesia (difficult locomotion), 141
Dysmenorrhœa
classification, 101, 118, 446
varieties of, 101, 119
congestive or inflammatory, 119, 127
membranous, 130
Dysmenorrhœa—*continued.*
Dr. John Williams on, 131
neuralgic, 125
obstructive, 119, 445
ovarian, 118, 129, 268
spasmodic, 120, 445
treatment, 122-131
Matthews Duncan on, 120, 121, 448, 449, 450.
Dysootocia, 268
Dyspareunia, 269

Ecraseur
mode of adjusting, 221
galvanic, 219, 306
in polypus, 219
in fibroid tumours, 288
in cancer, 305
Braxton Hicks', 288
Eczema of vulva, 365
Electricity in amenorrhœa, 113
Elytrorrhaphy, 199
Emmenagogues, 109-111
Emmet's operation, 243-246. See List of Authorities.
for laceration of cervix, 245
for lacerated perinæum, 200, 201
Endometritis
acute, 227
chronic cervical, 229, 230
chronic corporeal, 233
use of sound in, 233
Enemata, 24
Episiorrhaphy, 199
of the cervix, 297
Ergot and ergotine, 108, 111
hypodermic injection of, 286
in fibroid tumours, 286
in menorrhagia, 135
Examination of a case, 25-74
Exploratory incision, 69
Extra-ovarian cysts, 317, 320

Facies
ovariana, 53, 332
cancerous, 301
Fæcal tumours, 328
masses in the rectum, 312
Fallopian tubes, 21, 315
cysts of, 316

Fallopian tubes—*continued.*
inflammation of, 270, 315
dilatation of, 22, 270, 315
dropsy of, 270, 315
patulous condition of, 21
stricture of, 270
Fat-thrill, 55
Fever
ovaritis in, 267
hæmorrhage in, 133
Fibro-cystic tumour of uterus, 284-293
Fibroid tumours of uterus, 262
etiology, symptoms, 282-284
enucleation, 287, 288
extirpation of uterus, 288
oöphorectomy in, 289
surgical treatment of, 286
varieties of, 286-293
differentiation, 281
pathology, 277
varieties of, 278
differentiation of, from partial inversion, 211
diagnosis, 279
Fœtal heart-sound, 56
Follicular degeneration of cervix uteri, 251
Follicular vulvitis, 265
Freund's extirpation
of uterus, 308

Galvanic pessaries, 113, 114
Genu-pectoral position, 11
Glass rest, 347
Glycerine tampon, use of, 81, 134, 249
Gonorrhœa (vaginitis), 351
complications and results, 352
cystitis, 236, 352
latent, 352
peritonitis, with, 357
treatment of, 352, 354
Goodell. See List of Authorities.
Gouty diathesis and dysmenorrhœa, 122
Greenhalgh's metrotome, 82

Hall's lancet, 92
Hæmatemesis, vicarious, 101
Hæmatocele, 262, 263, 272
aspirating, 86
pelvic, 272
causes, 373
differentiation, 262, 275
puncturing, 86, 87, 276
symptoms, 273
intra-peritoneal, 273
sub-peritoneal, 273
treatment, 276
Hæmatometra, 356
Hæmato-salpinx, 315
Hæmoptosis, vicarious, 98
Hæmorrhoids, 24
Hæmostatics, 134, 135
Health-resorts, 396
Hewitt Graily. See List of Authorities.
Hildebrandt's method of injecting ergotine, in uterine fibroids, 286
History of the case, 27
Hot water, 286
to arrest hæmorrhage, 310
Hydramnois. See Dropsy of Amnion, 329
Hydrometra, 356
Hydrosalpinx. See Dropsy of Fallopian tube.
Hymen, 9
imperforate, consequences of, 9, 10
treatment of, 9
Hyperæmia of uterus, 224
Hyperæsthesia of vulva, 366
Hypospadias, 358
Hysteria, 116, 117, 125, 126
Hystero-epilepsy, 4
Charcot on, 117

Incontinence of urine, 15, 383
Injections
intra-uterine, 91
dangers of, 91
different methods of employing, 93
Injectors, different kinds of, 94
Instruments for diagnosis, 34-74
for some minor surgical operations, 75, 96
Intra-uterine stems, 162-165

Inversion of uterus, 208
causes, 209
differential diagnosis, 209-212
treatment, 212-213
signs and symptoms, 209
stages, 208
methods of reduction, 213
Barnes's method, 215
Braxton Hicks's method, 215
Emmet's ,, 214
Thomas's ,, 213
White's ,, 215
Isthmus of uterus, 13, 14, 16

Knee-breast position, 5, 171, 269

Labia, affections of, 3, 4. See Vulva.
Laceration of cervix uteri, 241
operation for, Emmet's, 244
of perinæum, 10, 200
consequences of, 197
treatment of, 195-204
Lactation, 234, 331, 334
Lameness, 140, 141
uterine, 288
Laparotomy, 292
Leeches, 109-127
Leiter's temperature-regulator, 269
Leucorrhœa
a symptom, 136. See Discharges.
examination for, 137
nature of, 136
vaginal, 137
varieties, 137
Lineæ albicantes, 333
Lymphatics
relation to septicæmia, 20

Mammary gland, affections of, 430, 431
abscess, varieties of, 418, 421, 432, 433
ætiological considerations, 414
injuries, 414
pregnancy, 415
lactation, 415
heredity, 416
age of patient, 414
menstruation, 414
syphilis, 415

Mammary gland—*continued.*
axillary glands, 420
amputation of, 439
cutaneous affections, 431
examination of, 413, 419. See also Tumours.
physical, 419, 421, 426
inspection, 419
by palpation, 419
by axillary glands, 420, 426
eczema of, 437
functional disorders, 431
inflammation, 420, 430, 431
varieties of, 430
general symptoms of, 432
preventive measures in, 433
during pregnancy, 433
after parturition, 433
palliative measures in, 434
operative ,, 435
innervation, 431
malignant disease, 424-428, 430, 436
shirt-stud abscess, 421
general features, 423
cysts, 425
Massage, 129
Masturbation, 5
Measurement of abdomen, 54
Medical examination, 5, 12, 25, 33, 106, 126
with speculum, 33
Medication, intra-uterine, 88-91
Medicinal injection, 91
agents, 88-91
Menopause, 27, 97
affections of the, 27, 97
Menorrhagia and metrorrhagia, 132
causation, 66-68
treatment, 132-135
some practical rules, 132-134
Menstrual blood
source of discharge, and character, 98
Menstruation and ovulation, 29, 97, 100
arrested, 29
disorders of, 101
irregular, 30
vicarious, 101

Metalbumen, 321
Metallo-therapy, 117
Microscope, 52-69
as a means of diagnosis, 52
in fibroid tumours, 285
in ovarian tumours, 322-324
carcinoma, 297
in discharges from uterus, etc., 63
Mobility of uterus
importance of, 14
Morphia
craving for, 117
Mucous discharges. See Discharges.

Nabothian glands, 234, 251
Nipples
affections of, 416, 431
cracks of, 416, 434
eczema of, 416
fissures of, 434
inflammation of, 434
Nitric acid, 74-76, 88, 91, 233, 235, 239
application to cervix, 74, 76
to uterine cavity, 74, 76
in malignant disease, 304, 308
to caruncle of urethra, 383
Noma, 372
Nuck, canal of, 4, 375

Occupations and habits, 28
Ointments, use of, 93, 94
in endometritis, 228
vaginitis, 353
vulvitis, 367
Oöphoritis, 266-269
Oöphoria, 268
Oöphoritis, 267
acute and chronic, 267, 268
Ophthalmoscope in diagnosis, 30, 389-392
Os uteri externum, 19
Os uteri internum, 13-16
Ovarian diseases, 316-343
classification of, 316
Ovarian cysts and cystomata, 316
classification of, 316
adhesions of, 335, 336
aspiration in, 82, 85
Ovarian cysts and cystomata—*continued.*
bursting of, 326
contents of, 320
cure of, spontaneous, 326
diagnosis, 53, 327-340
malignancy, 324, 325, 338
differentiation, 328-338. See Positive and Negative Signs, 332-335
exploratory incision in, 69, 70, 334
fluid, character of, 321
gangrene of, 326
hæmorrhage into, 337
inflammation of, 337
pedicle, twisting of, 226
physical signs of, 332
pregnancy, complicated with, 331-339
tapping in (through abdomen), 82, 83, 340
Ovaries, 22
absence of, 316
adhesions of, 23
apoplexy of, 23
atrophy of, 316
arterial supply, 23
cysts of. See Ovarian Cystoma.
examination of, 268
dermoid cysts of, 316
diseases of, 316
displacements of, 316
hernia of, 375
neuralgia of, 116-125
palpation of, 57, 59
sarcoma or fibroma of, 316-327
tubercle of, 316
Ovariotomy, 341
indications for, 342
Ovulation. See Menstruation.
Ovum, discharge of, 99

Pain
importance of, 115
in back, 115
in groins, 116
in hypogastric region, 116
hysterical, 116
in micturition, 383

Palpation, 54
abdominal. See Examination of a Case.
Paracentesis abdominis, 83
in ovarian tumours, 83
Paralbumen in ovarian cysts, 321
Parametritis, 259-266
causation, 259
differentiation, 262, 263
diagnosis, 260
symptoms and physical signs, 261
treatment, 265
Parturition
imprudence after, 186, 198, 236
too tight binding, 139, 167
Pelvic fascia, 16, 17, 18
Percussion, 56
Perimetritis, 253-259
causation, 253
differentiation, 262, 263
pathology, 254
symptoms and physical signs, 257
serosa, 254
treatment, 258
Perinæal body, 196
absence of, 197
restoration of (perineorrhaphy), 196
needles, 203
Perinæum, 10, 196
immediate treatment of laceration, 198
laceration of, 10, 196, 197
operation for, 200
dangers arising from, 10, 197, 198
shape of, 196
relaxation of, 10
use of, 197, 198
Peritonitis, pelvic. See Perimetritis.
Pessaries. See Displacements.
abuse of, 143-147
indication for use of, 147
method of introducing lever, 176
Bantock's, 163
Barnes's cup and stem, 130
Pessaries—*continued.*
Blackbee's, 149
Chambers's stem, 163
cup and stem, 152
Cutter's loop, 151
„ T-stem, 152
Cutter's retroversion, 119
„ prolapsus, 194
Duncan on, 143, 144
Fowler's, 151
Galabin's, 148
galvanic stem, 113
Gehrung's, 161
Godson's modification of Zwanck, 192
Goodell on the lever pessary, 174, 175
Greenhalgh's modification of Hodge, 125, 126, 146
Hewitt's cradle, 149
„ stem, 108
Hodge's, and varieties of, 145, 146
Hurd's, 161
in anteflexion, 160-165
in retroversion, 173-178
in retroflexion, 180, 181
inflating pessary, 134, 135
Napier's prolapsus, 131
Peaslee's stem, 108
Smith-Hodge, 146
Thomas's moveable lenses, 150
„ anteversion, 150
„ modified Cutter, 152
„ cup and stem, 164
„ modified Smith-Hodge, 174
Thomas on, 144
for anteversion, 143-152
watch-spring, 192
Wynn Williams's stem, 163
Zwanck's, 192
Physometra, 69
Piles, 24. See Rectum.
Placental polypi, 217
Playfair's probe, 38
Polyptome, Author's, 222
Sir J. Y. Simpson's, 221
Polypus uteri, 217
cellular, 217

Polypus uteri—*continued.*
diagnosis, 217, 218
differentiation from inverted uterus, 209-211, 218, 219
fibroid, 217
glandular or mucous, 217
signs and symptoms of, 218
positive, 218
negative, 219
treatment of, 219
Atthill's method, 220
Porro's operation, 308
Porte-caustique, 94
Position
of patient for introducing Sims's speculum, 31-33
Positor (uterine), 92]
Potassa fusa, use of, 95
Potassa c̄ calce, 96
Pregnancy
complicating ovarian tumour, 103. See Ovarian Cysts.
diagnosis of, 102
early diagnosis of, 103
differential diagnosis of, 281-283, 324, 335
with cancer of uterus, 308
Probe, uterine, of Sims, 39
Procidentia uteri, 183
Prolapsus of urethra, 381
of uterus, 183
of ovary, 11, 316
of vagina, 362. See also Prolapsus Uteri.
causes, 362
diagnosis, 363
treatment, 363
Puberty, period of, 98
Pudendal hæmorrhage, 3, 374
hernia, 4, 375
Purulent discharges, pus in urine, 45. See Discharge.
Pyosalpinx, 270, 315

Rectal examination, 24
Rectal exploration
Simon's method, 62
specula, 70, 71, 405
syringe, 73, 74
Rectocele, 186, 362
Rectum, 24
Rectum—*continued.*
abscess, 399
affections of, 393
classification, 393
examination of, 394
fistula, 399, 411, 412
foreign bodies, 411
hæmorrhoids, 399, 402, 403
relation to uterine disease, 400
various operations for, 400, 405-407
mortality after, 401
hæmorrhage, 404
plugging for, 408
impacted fæces, 398, 409
malignant disease, 398
minor operations on, 405
appliances for, 405
neglect of, 24
ointment applicator, 403
polypus, 401
pruritis ani, 396
procidentia, 401
Van Bruen's operation for, 401
syphilis, 393, 397, 404
therapeutics, general, 401-405
ulceration and stricture, 396
Verneul's operation for, 397
Repositor, uterine
of Sims, 170
Bantock's, 170
sound as a, 172
Rest
in dysmenorrhœa, 129
Retention of menstrual fluid, 9, 10
Retention of urine
mode of passing catheter in, 4
with displacements of uterus, 15
Retractor, Bozeman's, 74
Retroflexion of uterus, 178
Retroversion of uterus, 167
Rheophores, 112
Round ligament, 17

Salpingitis, 270
Sarcoma uteri, 312-314

Schroeder—operations for cancer of the uterus, 307
Laparotomy, 288. See List of Authorities.
Scirrhus of uterus, 295, 298
Scissors, Kuchenmeister, 80
Sea-bathing places, 397
Semi-prone posture, 32
Septicæmia, 1, 2, 10, 20
after tents, 50
Serous peritonitis, 254
Simpson, Sir J. Y. See List of Authorities.
galvanic intra-uterine stem, 113
hysterotome, 79
metrotome, 80-82
sound, 40
Sims, Marion, 16
curette, 252
division of cervix, 16, 158 159
knife, 81
semi-prone position of, 32
operation for cancer of uterus, 306
Skene-Goodman catheter, 200
Skin, appearance of, 54
in ascites, 334
ovarian tumour, 332
Sound, uterine, 39, 40
as a means of diagnosis, 41-43
dangers attending its use, 43
method of introduction, 41
in displacements, 42
in sub-involution, 238
various kinds of, 39
Spas, 391
Spaying, 289
Specula, vaginal, 33
various forms, 33
Barnes's, 35
Bozeman's, 72
Bryant's urethral, 72
Cusco's, 36
Hall Davis's, 34
Fergusson's, 37
Neugebaur's, 36
rectal, 70, 71, 205
Sims's, 35
Specula—*continued.*
mode of introduction, 38
Ricord's, 34
Speculum forceps, 39
spout, 77
Sphincter ani, laceration of, 201
Sterility, 385
causes, 386
treatment, 387
Stethoscope, 33
Sub-involution of uterus, 236-240
Suppositories, intra-uterine, 95
Syphilis
as a cause of sterility, 386
evidence of constitutional, 387

Tait, Lawson,
operation, 290
dilators of, 52
abdominal section by, 291
Tampon-introducer, 49
Tampon, vaginal, 90
Tape-measure, 33
Taxis in reduction of inverted uterus, 213
Temperature,
reduction of, 45
Leiter's regulators, 269
Tenaculum, Sims's, 39
in diagnosis of lacerated cervix, 242
in applications to uterine canal, 232
Tents, 48, 62
laminaria, 48
sponge, 48
tupelo, 48
use of, in dilating cervix, 48
introducer, 50
dangers attending use, 50
method of introduction, 50
rules to observe when employing, 50
Test-papers of Oliver, 44
Thermo-cautery, Paquelin's, 78
Thermometer, clinical, 45
Thomas, Gaillard. See List of Authorities.
Tinnitus aurium, 30

Torsion for removal of polypi, 219
Trachelorrhaphy, 200
Trichomanas vaginalis, 65
Tumours
diagnosis of, 424
signs and symptoms, 424
age, 424
condition, 424
rapidity of growth, 425
mobility, 425
pain, 425, 426
axillary glands, 426
constitutional symptoms, 426
appearance of mamma, 426, 427
question of recurrence of, 427
section of, 428
treatment, 436, 437
Tympanitic distension of abdomen, 62, 258

Umbilicus, 54
Urethra, 5
affections of, 381
angioma of, 381
caruncle of, 382
dilatability of, 5, 383
excrescence of, 5, 382
exploration of, 5, 72
inflammation of, 381
polypus of, 382
prolapse, 381
relation to vagina, 4
Urethral forceps, 49
dilator, 72
orifice, 4
Urine
examination of, 44
Urinal, 361
Urinary fistula, 360-362
Uterine cavity
dimensions, 13
Utero-abdominal exploration. See Examination of a Case.
Utero-sacral ligaments, 17
stretching of, 17
Uterus, 12
ablation of, 308
amputation of the neck of, 305
Uterus—*continued.*
anteflexion of, 152-165
causation, 154
Gaillard Thomas on, 153
symptoms, 154
diagnosis, 155
treatment, 156-165
anteversion of, 140-165
degrees of, 141
diagnosis, 142
treatment, 143
pessaries in, 144
areolar hyperplasia of,
atresia of, 355
axis of, 13, 14
cervix uteri, 18, 19
cancer of body of, 310
cervix, 296
cauliflower excrescence of, 296
congestion of, 224
conical cervix, 19
dimensions of, 13
displacements of, 15, 139
their predisposing causes, 139
their results, direct and indirect, 140
fibrocystic tumours of, 284
fibroid tumours, or fibromata of, 277
fixation of, 14
hyperæmia of, 224, 225
passive, 225
hypertrophy and hyperplasia of, 233-236
inflammation of — acute, chronic, 225, 226
infra-vaginal portion of, 18
inversion of, 208
isthmus, 13, 14
ligaments of, 14, 16, 17
mobility of, 15
natural position of, 13, 14
polypus of, 217
procidentia of. See Prolapsus.
prolapsus of, 182-204
stages of, 182
prolapsus of, complicated with cystocele, 183, 184

Uterus—*continued*
gradual descent of uterus, 183
pathology of, 185
causation, 185, 186
symptoms, 186, 187
diagnosis, 187
treatment, 188
pessaries, 191-195
surgical procedures, 195
retroflexion of, 178
diagnosis, 179
treatment, 180, 181
retroversion of, 166
degrees of, 167
symptoms, 167
diagnosis, 168
treatment, 169-178
sarcoma of, 312
secretions of, 20
shape of, 12-14, 18
stenosis, 79. See Conoidal Cervix.
subinvolution of, 236
size of, 13
supports of, 17
weight, 13

Vagina, 5, 355
absence of, 355
atresia of, 355
cancer of, 364
cicatrices of, 356, 357
closure of, 9, 359
cystic tumours of, 364
dilatation of, 347
diseases of, 344, 364
distension of, from imperforate hymen, 9, 356
epithelioma of, 364
fistulæ of, 360
hernia of, 364
influence of respiration on, 6
„ decubitus on, 10, 11
muscularity of, 5
plugging to check hæmorrhage, 134
prolapse of, 362
relation of, 5-8
Vaginal douche, 133
orifice, 2
Vaginal secretion, 21
syringe, 73, 74
discharges. See Discharges.
paracentesis, 85
Vaginal portion of cervix, 18
hypertrophy of, 184
Vaginal walls, 5-8
relations to pelvic viscera, 5-8
inversion in prolapsus, 185
Vaginismus, 344
treatment, 346
Vaginitis, 348
varieties, 349
diphtheritic, 349
granular, 350
gonorrhœal, 350
treatment, 352
Vomiting
in hæmatocele, 274
in perimetritis, 257
Vulva, 1
abscesses of, 372
affections of, 365
atresia of, 358
cancer of, 375
condylomata of, 370
cutaneous affections of, 376
cysts of, 3, 366, 374
diseases of, 2, 365
eczema of, 376
follicular inflammation of, 371
gangrene of, 2, 372
hernia of, 4, 375
hæmorrhages of, 3, 374
hæmatoma of, 3, 374
hydrocele of, 375
hyperæsthesia of, 366
inflammation of, 370
lupus of, 369
orifice of, 2
prurigo of, 365
phlegmonous inflammation, 372
pruritus of, 368
purulent inflammation of, 370
syphilis of, 365, 368-370, 373
warts of, 373
varix of, 374

Vulvitis, 370
of children, 370

Waters, 395-397
Weir Mitchell's treatment of chronic ovarian excitement, 129, 130, 239
Wells, Sir Spencer, trocar of, 83
guarded do., 83
on fibroid tumours, 280, 289, 292
on malignant disease of uterus, 308
Wells—*continued.*
on ovarian tumours, 315-320, 326, 330, 332, 335, 340-342
White's repositor for inversion. 215
Wire écraseur, 220, 288

Zinc points of Braxton Hicks, 94, 233
Zwanck's pessary for prolapsus, 192

INDEX OF NAMES OF AUTHORS REFERRED TO.

Alexander, 450
Allingham, Herbert, 408
Allingham, W. See Chapter on Rectum.
Amussat, 359
Aran, 257, 239, 267
Atlee, 315, 333, 335
Atthill, Dr. Lombe, 75, 76, 93, 95, 219, 220, 252
Aveling, 228, 288

Bantock, 163, 165, 169
Barker, 242
Barnes, Dr. Robert, 35, 49, 70, 75, 79, 93, 94, 113, 154, 187, 190, 193, 209, 215, 216, 219, 221, 225, 236, 267, 268, 276, 289, 315
Battey, Dr. (of Georgia), 23, 116, 269, 289, 291
Baudelocque, 209
Bennet, 236
Bigelow, 5
Bilroth, 424
Birkett, 424
Blackbee, 149
Boyer, 209
Bozeman, 74
Braune, 7, 13
Bright, 100, 285, 391, 392
Bryant, 71, 72

Charcot, 117
Chassaignac, 288, 305
Cintrat, 288
Clark, Sir A., 267
Clark, W., 298
Clay, 309, 314
Clover, 46
Croft, 202
Crosse, 208
Cruveilhier, 18
Cusco, 1, 36, 348
Cutter, 152, 157, 173, 178, 181, 193, 194, 287

Davis, Dr. Hall, 34
Dieffenbach, 199
Dittel, 411
Doherty, 257, 308
Drysdale, 322, 323, 333
Duncan, Dr. Matthews, 21, 39, 40, 52, 120, 121, 143, 144, 209, 215, 219, 221, 225, 253, 260, 261, 267, 268, 276, 312, 320, 344, 348, 384
Dupuytren, 359

Edis, 353
Emmet, 159, 199, 202, 214, 241, 242, 243, 244, 245, 246, 288

Farre, 251
Fergusson, 37
Finn, 237
Fowler, 157
Foulis, 324, 325
Fox, Calcott, 369
Fox, Wilson, 317, 318
Freund, 303, 308

Galabin, 148, 224, 297, 317
Garrigues, 323
Gehrung, 160, 161
Godson, 193
Gooch, 220, 221
Goodell, 10, 11, 31, 55, 84, 153, 160, 161, 174, 175, 201, 206, 209, 241, 242, 269, 289, 315, 374, 380, 382
Gowland, 70
Greenhalgh, 82, 85, 128, 146, 164 176, 181, 191, 193

Guerin, 352
Gusserow, 312

Hall, 76, 92
Hart and Barbour, 2, 171, 172, 297, 298, 313, 325
Hayes, 352
Hegar, 52, 288, 289
Heitzman, 6
Henlé, 22
Hewitt, 117, 148, 149, 164, 165, 236
Hicks, 93, 94, 215, 233, 288
Higginson, 70, 73
Hildebrandt, 286
Huguier, 206, 317
Hurd, 161, 162

Keith, 255
Kidd, 40
Klob, 209, 236
Kobelt, 3
Kuchenmeister, 79, 80, 158, 159, 231

Lane, 70
Langenbeck, 209
Leiter, 134, 228, 258, 260, 266, 269
Lücke, 317

Martin, 197, 290, 290, 291
McClintock, 190, 214, 272
Méhn, 321
Mitchell, Weir, 129, 239
Moore, W., 379

Napier, 193
Nélaton, 47, 272
Neugebauer, 36, 40
Nott, 385

Palfrey, 196
Pallen, 242
Paquelin, 3, 113, 287, 303, 307, 313, 314, 373, 383
Pean, 288
Peaslee, 164, 165, 169, 289, 315, 338
Playfair, 38, 75, 232, 233
Pollock, G., 408
Priestly, 52
Puzos, 209

Ramsbotham, 12, 13, 19
Richardson, 249
Richet, 12
Ricord, 34
Ritchie, 318
Rokitansky, 208

Sappey, 12
Scanzoni, 234, 236, 247, 355, 384
Schroeder, 20, 58, 99, 153, 167, 180, 184, 210, 247, 251, 254, 260, 272, 273, 279, 285, 288, 289, 307, 308, 315, 318, 319, 357
Simon, 62, 69, 199, 303, 305, 307
Simpson, 39, 79, 113, 221, 288, 295, 296, 311, 313, 380, 385
Sims, Marion, 16, 32, 35, 39, 40, 42, 61, 75, 80, 81, 82, 90, 128, 134, 135, 158, 159, 164, 169, 170, 199, 200, 203, 206, 232, 235, 242, 244, 252, 287, 288, 303, 306, 308, 346, 347, 348, 354, 361, 362
Smith, 21, 165, 175, 176
Smith, Heywood, 269
Smith, Henry, 407

Tait, 52, 69, 129, 198, 290, 354, 366
Taylor, 205, 208
Thomas, 4, 144, 150, 152, 153, 154, 164, 169, 173, 174, 176, 178, 181, 183, 196, 198, 209, 211, 213, 215, 230, 234, 236, 239, 253, 259, 266, 288, 315, 321, 327, 348, 358, 359, 360, 366, 372

Velpeau. See Chapters on Mammary Gland.
Virchow, 273

Waldeyer, 302, 317. 318
Wecker, De, 389, 390, 391
Wells, 13, 84, 280, 308, 315, 317, 318, 320, 327, 335, 336, 340, 341, 342
White, 215
Williams, John, 131
Williams, Wynn, 163

Ziemssen, 130

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