

Observations of the diseases of the rectum / by T.B. Curling.

Contributors

Curling, Thomas Blizard, 1811-1888.

Publication/Creation

London : S. Highley, 1851.

Persistent URL

<https://wellcomecollection.org/works/jyc9x6y8>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

M18677

Presented by the Widow

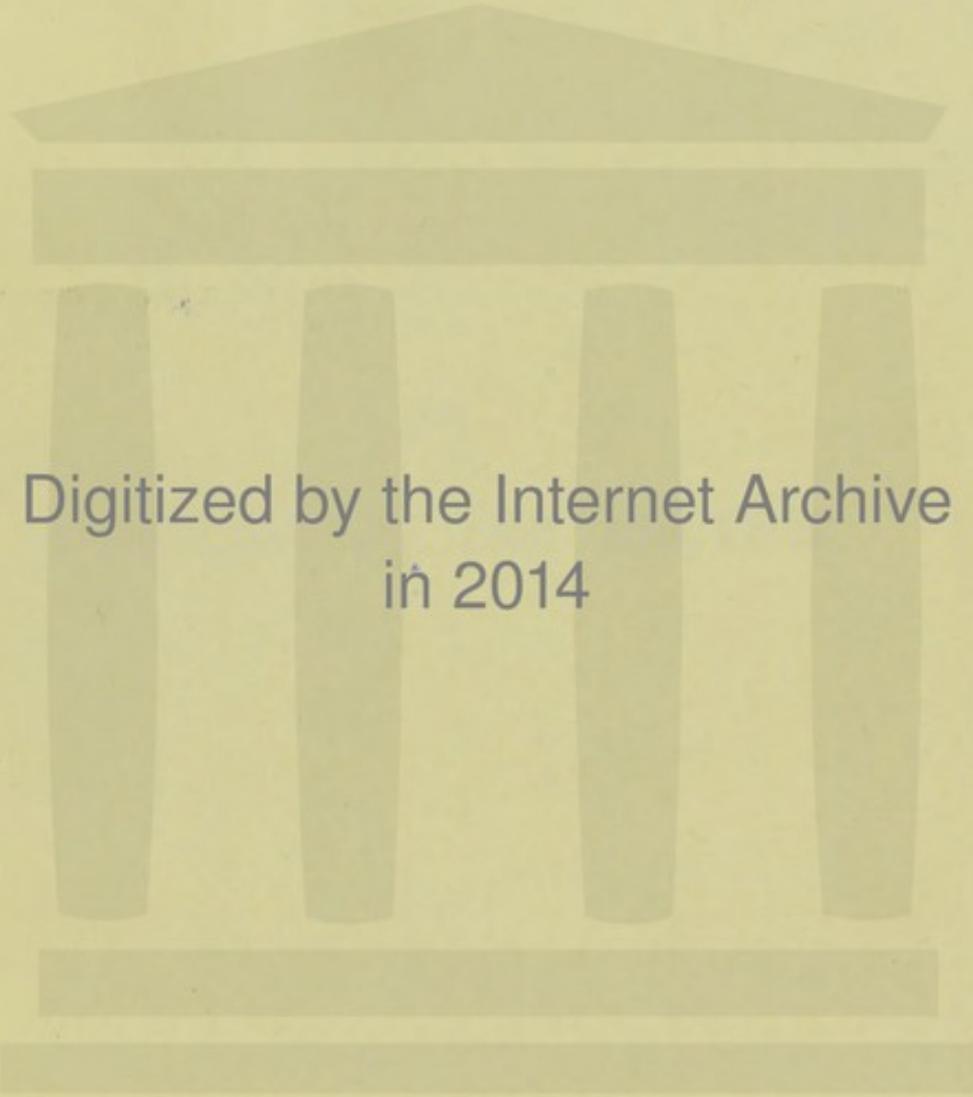
OF

ROBERT BENTLEY TODD, M.D.

MARCH, 1860.

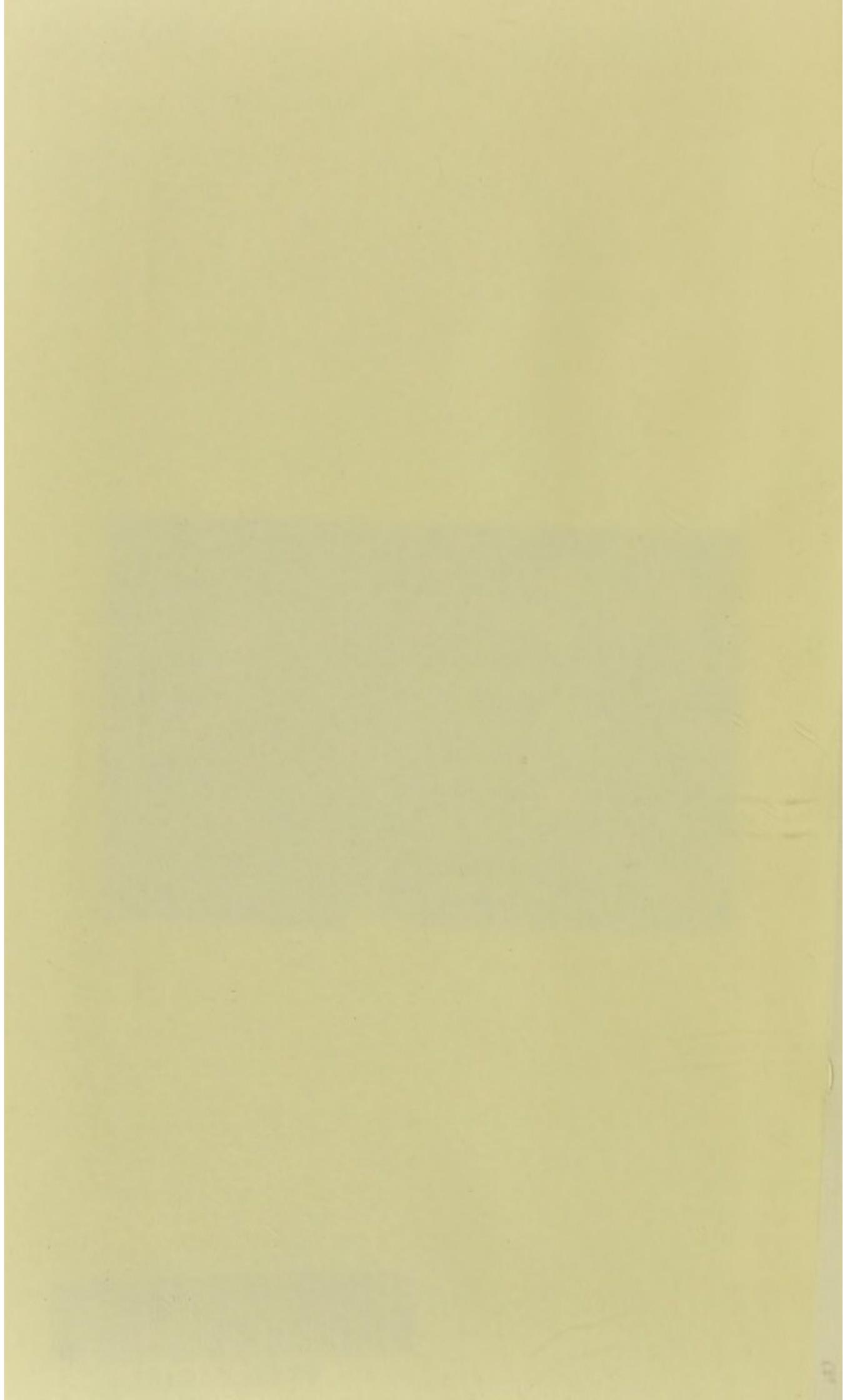


22101331073



Digitized by the Internet Archive
in 2014

<https://archive.org/details/b20397641>



Dr Todd F. R. S.

or

With the best regards of

J. B. Currier

ON
DISEASES OF THE RECTUM.

By the same Author, 8vo. Price 12s.

A TREATISE
ON THE
DISEASES OF THE TESTIS.

WITH ILLUSTRATIONS

Observations

ON THE

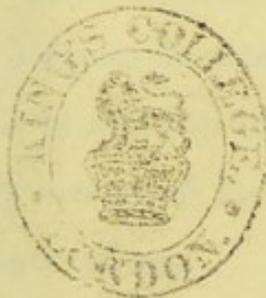
DISEASES OF THE RECTUM.

KING'S COLLEGE HOSPITAL
CANCELLED
MEDICAL SCHOOL.

BY

T. B. CURLING, F.R.S.

SURGEON TO, AND LECTURER ON SURGERY AT, THE LONDON HOSPITAL,
ETC.



LONDON:

SAMUEL HIGHLEY, 32, FLEET STREET,

Bookseller, by Appointment, to the Royal College of Surgeons of England.

1851.

M18677

WELLCOME INSTITUTE LIBRARY	
Coll.	welMOmec
Call No.	WI600
	1851
	C970

P R E F A C E.

IN the following pages, I have endeavoured to give a concise account of the changes that take place in the structure of the rectum, and of the symptoms and treatment of its diseases. Although the subject has been much and ably written on, I have been assured that such a work, founded upon adequate observation, and including modern improvements in treatment, would be acceptable to the younger members of the profession. That there will be found many deficiencies, I am fully aware; indeed, a complete treatise has not been attempted, but it has rather been my object to offer such views of pathology as may lead to judicious practice. Should I be so far successful, or have in any degree aided in the promotion of surgical knowledge, I shall be sufficiently rewarded for the pains bestowed in preparing these observations.

37, NEW BROAD STREET, CITY,

April 1851.

PREFACE

In the following pages I have endeavored to give a
concise and accurate account of the history and
progress of the science of the mind, and of the
principles of its culture. Although the subject has
been treated in a popular manner, I have not
neglected to give a full and accurate account
of the progress of the science, and of the
principles of its culture. I have also given
a full and accurate account of the progress
of the science, and of the principles of its
culture. I have also given a full and
accurate account of the progress of the
science, and of the principles of its culture.

CHAPTER I
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

CONTENTS.

CHAPTER I.

INTRODUCTORY OBSERVATIONS ON DISEASES OF THE RECTUM.

	PAGE
Persons most subject to these Diseases.	1
Instruments for examining and making applications to the Rectum	2
Description of an improved Speculum	3
Advantages of Chloroform in the Treatment of these Diseases	4
Operations on the Rectum.	4

CHAPTER II.

IRRITABLE ULCER OF THE RECTUM.

Description of the Folds at the lower part of the Rectum. .	6
Seat and Characters of the Irritable Ulcer	7
Symptoms of the Disease	7
Mode of inspecting the Sore.	9
Treatment of Irritable Ulcer	9
Division of the Sphincter Ani	10
Treatment after the operation	11
Sores and Ulcers at the margin of the Anus	12
Treatment	13

CHAPTER III.

SPASM OF THE SPHINCTER MUSCLE.

Symptoms of Spasm	14
Treatment	15

CHAPTER IV.

HÆMORRHOIDS.

Arrangement of the Veins in the lower part of the Rectum. .	16
Different Forms of Hæmorrhoids	16
Morbid Anatomy of Piles, and changes in structure consequent upon them	17
Causes of Hæmorrhoids	19
Symptoms	20
Disorders of the Urinary Organs in connection with this Disease	22
Inflammation, Suppuration, and Sloughing of the Hæmorrhoidal Folds	24
Bleeding from Piles, and periodical discharges of blood from the Rectum.	25
The Sources of Hæmorrhage	27
Treatment of External Hæmorrhoids	28
By Excision	29
Treatment of Internal Hæmorrhoids.	30
By Excision	33
By Escharotics	34
By Ligature	35
Mode of Arresting Hæmorrhage	38
Use of Mechanical Aids.	41

CHAPTER V.

PROLAPSUS OF THE RECTUM.

Pathology of Prolapsus	44
Symptoms	48

	PAGE
Treatment	49
Cure by Operation	50

CHAPTER VI.

POLYPUS OF THE RECTUM.

Description of Polypus in Children	54
Treatment	55
Polypus in the Adult.	57

CHAPTER VII.

FISTULA IN ANO.

Description.	59
Causes of Fistula	60
Situation of the Inner Opening	63
Complicated Fistula	65
Treatment of Rectal Abscesses	66
Mode of examining a Fistula.	67
Treatment of Complete Fistula by Operation	67
Treatment of Blind External Fistula.	70
Treatment of Blind Internal Fistula	70
Cure of Fistula by Ligature	71
Treatment of Complicated Fistula.	73
Treatment of Fistula communicating with the Vagina	74
Treatment of Lacerated Perineum in Child-birth.	75

CHAPTER VIII.

CHRONIC ULCERATION OF THE RECTUM.

Description of the morbid changes in Chronic Ulceration	77
Causes	78
Syphilitic Ulceration	79
Symptoms of Chronic Ulceration	80
Treatment	81

CHAPTER IX.

STRICTURE OF THE RECTUM.

	PAGE
Description of the changes in the coats of the Rectum occurring in Stricture	82
Causes of Stricture	84
Contraction produced by the healing of ulcers and wounds in the Rectum	85
The Seat of Stricture.....	86
Excrescences on the mucous surface occurring in Cases of Stricture	87
Symptoms of Stricture	88
Obstruction from Tumors external to the Rectum	92
Treatment of Stricture	92
Dilatation by Bougies	93
Mode in which Bougies operate in curing Strictures	94
Difficulties in the examination, and treatment of Strictures high up in the Rectum	97
Dangers incurred in the use of bougies in such cases	97
Incision of Strictures.....	98
Treatment of the diseased mucous surface	100
Treatment of Obstruction from Stricture in the Rectum....	103
Operation for Artificial Anus.....	106
Advantages of Littré's and Callisen's Operation compared..	106
Operation of opening the colon in the left iliac region described.....	108

CHAPTER X.

CANCER OF THE RECTUM.

Morbid Changes in the Rectum produced by the different forms of Carcinoma	109
Usual seat of the Disease	111
Symptoms	111
Treatment	113
Excision of the Carcinomatous Rectum	115

	PAGE
Obstruction from Cancer, and propriety of operating for Artificial Anus	115
Epithelial Cancer of the Rectum	116

CHAPTER XI.

FÆCES IMPACTED IN THE RECTUM.

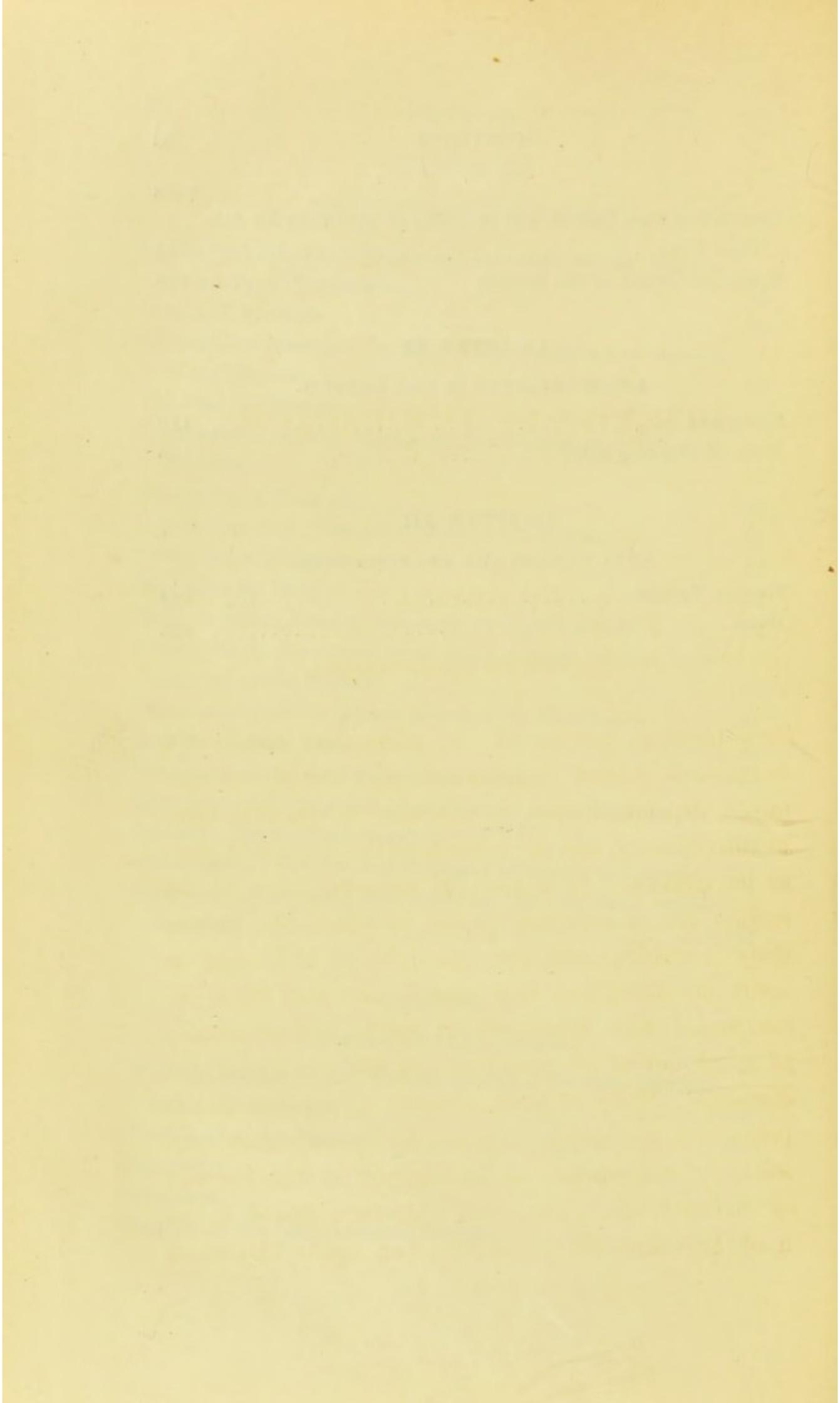
Symptoms	119
Mode of affording relief	120

CHAPTER XII.

ANAL TUMORS AND EXCRESCENCES.

Fibrous Tumors.	122
Warts	123





ON
DISEASES OF THE RECTUM.

CHAPTER I.

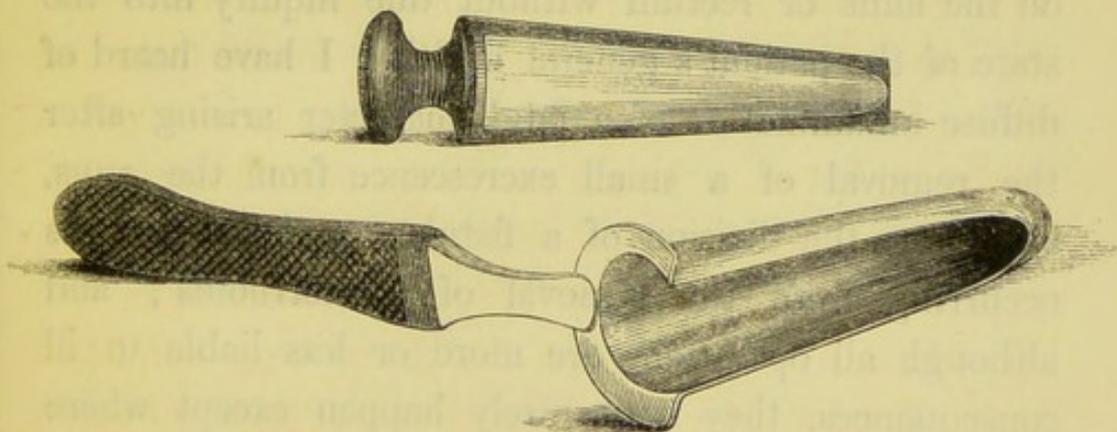
INTRODUCTORY OBSERVATIONS.

THE terminal portion of the alimentary canal—the rectum—is subject to numerous and varied derangements, dependent upon its structure, its peculiar office in the economy, and its relation to the important parts in its vicinity. As a class of diseases, those of the rectum are as common as any to which the human body is liable; and they give rise to sufferings, in many instances, not only severe, but also often accompanied with depression of spirits, and an anxiety of mind, out of all proportion to the gravity of the disorders. Many of these diseases spring from habits prejudicial to health, engendered by sedentary pursuits, or consequent on indulgence in the luxuries of civilized life. They are, therefore, found to be most prevalent in the middle and upper classes of

society. With a few exceptions, there are no diseases which yield more readily and effectually to careful management and surgical treatment, or which in their results afford greater satisfaction to the practitioner.

In the treatment of these diseases it is, in most cases, important that an early and careful examination should be made of the part affected. By neglect of this precaution, serious disorders, which, if detected in time, would yield easily to treatment, are allowed to make progress, and to become much more difficult of cure. In females, the delicacy of the sex too frequently leads to concealment of these complaints, and raises obstacles to an inspection of the seat of them. The examination of the parts diseased, as well as the performance of certain operations, may be considerably aided by the use of a speculum. They are made of various kinds, some of them ill adapted for the object in view. Thus, many of the dilators are of little use in consequence of the bulgings of the mucous coat of the bowel between the narrow blades of the instrument. There is an old-fashioned but serviceable instrument, consisting of a longitudinal section of a steel tube, with one extremity closed, which has long been employed at the London Hospital in examining these diseases, and which is well adapted for protecting the bowel, and finger of the surgeon, in operations for fistula. Mr. Hilton has recently contrived a plated speculum, with the end closed, and an aperture at the side into which a moveable piece slides. I have often used it, but

have found the side opening too narrow to afford a complete view of an ulcer or pile of any size ; and in consequence of the aperture not being carried to the extremity, fæces are liable to lodge there and prove troublesome to remove in protracted examinations, as in searching for the inner orifice of a fistula. Ferguson, of Giltspur Street, has therefore made, by my direction, a plated speculum of a conical form, so as readily to penetrate the sphincter, with the side opening of sufficient width, and carried to the blind extremity of the instrument : and instead, also, of a moveable piece, I have substituted an ebony plug, fitted with a plate which fits close into the aperture. The plug admits of being more readily removed and replaced than a slide. The subjoined engraving shows the speculum, reduced in size about one-half.



In the application of remedies to the interior of the rectum, the common glass reflecting speculum, coated with caoutchouc and an open end, will often be found useful. Leeches may be applied to the mucous mem-

brane of the bowel by means of a glass speculum with a small side opening near the closed extremity. Before using any of these instruments, the rectum should be well cleansed by an injection of warm water.

In the treatment of diseases of the rectum, chloroform is a valuable auxiliary. In making examinations, I have derived the greatest assistance and advantage from it. Under its influence the irritable sphincter relaxes, and a complete view can be had of the seat of disease in cases where pain and spasm would otherwise offer almost insuperable obstacles to a satisfactory exploration. And, in operations more painful than serious, the use of this remedy has not only facilitated their performance, but saved the patient considerable suffering and distress.

It may seem superfluous to remark, that no operation, even of a trivial character, should be performed on the anus or rectum without due inquiry into the state of the patient's general health. I have heard of diffuse inflammation of a fatal character arising after the removal of a small excrescence from the anus, and after the division of a fistula; and of phlebitis occurring from the removal of hæmorrhoids; and although all operations are more or less liable to ill consequences, they very rarely happen except where the precaution alluded to is neglected. No prudent surgeon would undertake an operation on these parts in a person with a broken-down constitution, or with organic disease of the lungs or liver, or with albuminous urine; but with ordinary caution in the selec-

tion of cases, and with common care in performing the operations necessary in diseases of the rectum, and conducting the after-treatment, they are as successful and satisfactory as any belonging to surgery.

CHAPTER II.

IRRITABLE ULCER OF THE RECTUM.

THE mucous membrane of the lower part of the rectum is arranged in longitudinal folds, which disappear in the expanded state of the bowel. These folds terminate below at the external sphincter. Just within this structure, and between the folds, the mucous membrane is slightly dilated, variously in different subjects, but in many to such an extent as to form small sacs or pouches. Besides these folds, and in the spaces between them, there is a series of short projecting columnar processes, about three-eighths of an inch in length, separated by furrows or sinuses, more or less deep, which are arranged around the lowest part of the rectum. These various folds, though no doubt well developed in the living state, are not always obvious after death, unless the vessels are congested. They are rendered distinct by injections with coloured size, both in the adult and in the fœtus. Now in the evacuation of the rectum, foreign bodies or little masses of hardened fæces are liable to be caught or detained in the pouches just described. And it is in these little sinuses, thus exposed to irritation and abrasion, that a superficial circumscribed ulcer is occasionally formed.

On examining the ulcer, without distending the rectum, the lateral edges only being presented to view, the breach of surface has the appearance of a *fissure*,—the term commonly given, but improperly, to this sore, which is obviously more than a mere cleft or rent in the mucous membrane of the bowel. Such an ulcer may occur in any part of the lower circumference of the rectum, but it is very generally found at the back part, towards the sacrum. It is quite superficial, and, though sometimes circular, is more usually of an oval shape; its long axis being longitudinal, and its lower extremity extending within the circle of the internal sphincter. On tactile examination, the breach in the mucous surface and the extent of the ulcer can be easily distinguished by a practised finger, especially when the edges are, as is often the case, somewhat indurated. With the speculum, the longitudinal folds being stretched out, the ulcer can be fully exposed, and it is then clearly seen not to be a mere fissure, but a superficial sore, which may extend beyond the edges of the opening in a common-sized speculum. The surface is of a brighter red than the surrounding membrane, and has the usual indented appearance of an ulcer.

The amount of suffering produced by this superficial ulcer varies a good deal, but the sore is generally extremely sensitive, and occasions severe distress. It is so situated that the fæces, in their passage outwards, rub over its surface, and the painful contact excites spasm of the sphincter muscle, causing a sharp burning pain, and often a forcing sensation, which lasts for two

or three hours, the distress being usually greater after defecation than during the act. This is sometimes so acute that patients resist the desire to pass their motions, and allow the bowels to become costive in dread of the sufferings brought on by evacuating them. The stools, when passed, are streaked with blood. The pain, though much increased during and for some time after defecation, is in many cases constant; the patient never being free from a sharp lancinating pain, which disturbs rest, depresses the spirits, and renders the sufferer truly miserable. The least pressure at the anus gives uneasiness, so that the patient is obliged to avoid sitting, and either to rest on one hip or to lie down. The pains often assume a neuralgic character, and are described as shooting up the back, down the limbs, or along the urethra. The irritation may extend to the bladder, producing painful micturition.

This irritable ulcer occurs commonly in middle life, and is much more frequent in women than in men. It is met with as often in single as in married women, and in persons of an hysterical temperament there are occasionally pains of so anomalous a character as sometimes to mislead the practitioner. Indeed, it is surprising how often this sore is overlooked, even in common cases. In all instances of painful defecation for which the surgeon is unable to account, the rectum should be carefully examined with the aid of the speculum. Ulceration of the lower part of the rectum sometimes occurs in connection with internal piles, and is attended with bleeding.

On the attempt to separate the margins of the anus, or to dilate the sphincter to get a view of the ulcer, or even to introduce the finger, spasm, with an aggravation of pain, is, in most cases, immediately excited; and the orifice becomes strongly contracted and forcibly drawn in. When this is the case, it is better to desist, and to get an assistant to administer chloroform. As soon as the system is under its influence, the sphincter yields completely, and the surgeon is able to make a satisfactory exploration of the part, and to ascertain the exact seat, character, and extent of the ulcer. In those cases in which there is little or no spasm of the sphincter, or when the muscle is relaxed under chloroform, the surgeon may dilate the anus with his two fore-fingers, so as to get a tolerably good view of the sore. A better examination, however, may be made by the aid of the speculum.

This ulcer seldom heals under the influence of local applications. The treatment necessary is a longitudinal incision through its centre, including the sphincter muscle. The object of the operation is to place this muscle at rest for a time, and to enlarge the passage and displace the sore; thus removing those sources of irritation which prevent its healing. An incision, it is true, is not invariably required; but in all cases in which the pain is considerable, and in which there is much spasm of the sphincter, the attempt to procure the healing of the sore by local applications so often protracts the patient's sufferings, and so constantly ends in failure, that it is not desirable to make it. In the

evening before the operation, an aperient should be given, in order that the bowels may remain at rest for a day or two after the incision. The patient should be placed on the left side, with the nates projecting a little over the edge of the bed, and opposite a good light, and with the thighs bent. Chloroform can then be administered. The division of the ulcer may be performed in two ways; by an incision from within, or from without the rectum. In the latter mode, a sharp-pointed bistoury is carried through the base of the ulcer at a sufficient depth to include the sphincter, and the parts are divided by an incision from without inwards through the centre of the ulcer. A speculum must be previously introduced, to protect the opposite walls of the bowels from the point and edge of the bistoury. I prefer the operation from within outwards, which may be easily, and, indeed, more conveniently performed without the speculum. The cutting edge of a straight blunt-pointed bistoury is to be applied to the centre of the ulcer, which is to be divided by an incision extending to the internal sphincter. The fibres of this muscle are easily felt with the left fore-finger, and the depth of the incision regulated accordingly. When the ulcer is situated in the front part of the rectum, it should be divided a little to one side, or the wound will not heal readily. Besides, in the female, the division towards the vagina may cause incontinency of fæces.

After the operation, a small portion of dry lint should be passed into the wound as a plug to prevent bleeding,

and to keep the edges apart. I have never been troubled with hæmorrhage after this operation, but if any vessel be seen pumping out blood, it can be seized with Assalini's forceps and tied. In two days a mild aperient may be given, and repeated when necessary, to prevent costiveness, and keep the motions somewhat soft. In many cases no further local application is required than a pledget of lint dipped in sweet oil, which the nurse may carry to the bottom of the wound after each evacuation. The healing of the sore may often be promoted by first coating the lint with the following application:—*Liquor Plumbi Diacetatis*, ℥j. ; *Confectio Rosæ*, ℥j., M. ; and then dipping it in sweet oil. The effect of the operation is remarkable. It at once relieves the severe symptoms, the pain experienced afterwards being merely the sore of the wound, and rarely fails to secure the healing of the ulcer in the course of two or three weeks. The progress of the sore must, however, be watched until the surgeon is satisfied by an examination that the part is quite healed ; for I have known of disappointment ensuing, and the painful symptoms returning, after the case had been given up under the supposition that the patient was cured. If the healing of the ulcer proceed slowly, it may be touched with a camel's hair pencil dipped in a solution of the nitrate of silver (gr. x. to ℥j.), or occasionally smeared over with some mild stimulating ointment. No weakness of the muscle results from division of the sphincter, its function being perfectly performed afterwards.

Patients will not always submit to the division of the sphincter without a previous trial of other means ; and where there is not much spasm, and but little suffering, the cure of the sore may often be obtained without it. The patient should remain at rest in the recumbent posture, and should take some mild aperient medicine to ensure soft evacuations. The ulcer may be brushed over occasionally with a solution of the nitrate of silver, and a mild mercurial ointment smeared over its surface night and morning,—such as the *Unguentum hydrargyri* diluted with two parts of lard, or the *Unguentum hydrargyri nitratis mitius*. For sensitive ulcers, ointments containing the extract of belladonna are recommended ; and this drug is sometimes added to mercurial applications. It may be used in the proportion of from ℥j.—℥ij. to ℥j. of lard. I have found marked relief derived from an ointment containing chloroform. The following is a prescription for this ointment, which will be found useful in many painful affections of the rectum and other parts :—

R Chloroformyl. ℥j.—℥ij. ;
 Zinci Oxidi, ℥ss. ;
 Olei Olivæ, ℥j. ;
 Cerati Cetacei, ℥iv. ;
 M. Fiat Unguentum.

The delicate skin at the margin of the anus is subject to a linear abrasion or chap, and small sores occasionally form between the folds of integument at the outer edge of the sphincter, which probably originat

in an affection of the follicles of the part. These chaps and sores cause some uneasiness in defecation, and often give rise to troublesome itching; but they are never attended with spasm of the sphincter or with the severe pain which occurs in ulcer of the rectum, and there is no difficulty in getting them to heal. A piece of lint soaked in black wash, or in a lotion of the oxide of zinc (ʒj. to ʒvj.), or of common Goulard, and lodged in the part, generally answers the purpose. The small sores sometimes require to be touched with the point of the lunar caustic. A lotion of the nitrate of silver is objectionable, as it stains the linen. Primary syphilitic sores sometimes occur in the immediate vicinity of the anus. In females, a chap or excoriation at this part may be readily inoculated by the matter from a sore on the vulva. A description of the appearances and treatment of such ulcers would be beyond the scope of this work, and I call attention to them, only, that if they should be met with, their true character might not be overlooked.

CHAPTER III.

SPASM OF THE SPHINCTER MUSCLE.

PERSONS occasionally suffer from symptoms similar to those described in the last chapter, but more moderate in degree. There is pain in defecation, increased afterwards, and lasting for half an hour or an hour. It is described as a forcing sensation, or a feeling as if the bowel were unrelieved. The anus is strongly contracted and drawn in by the action of the sphincter. Any attempt to examine the part induces spasm; and, the finger being passed through it, is tightly grasped by the muscle, as if girt by a cord. In cases of some standing, the muscle often becomes hypertrophied, and forms a mass, encircling the finger like a thick unyielding ring. The spasm is not always confined to the anus, for the fibres of the internal sphincter occasionally become enlarged, contracting the lower part of the gut, and closing strongly around the finger. The fæces, however, are not streaked with blood: there is not the racking and constant pain experienced in the case of ulcer, and there are intervals of ease and relief from pain, particularly when the patient's attention is engaged.

This affection occurs commonly in hysterical females.

I have not myself met with it in other persons independently of some local source of irritation, as an ulcer or an inflamed internal pile; and I believe that in men simple spasm is a rare complaint. The investigation of such a case is not satisfactory without an examination of the rectum with the speculum; and, in most instances of painful spasm, I am convinced that some direct cause of irritation will be discovered. I recently attended an Italian who had severe spasm, consequent upon the irritation of an inflamed prostate from gonorrhœa. In women, the suffering attending this complaint is aggravated during the menstrual period.

The treatment required in simple spasm is mild laxatives, and the local application of an ointment containing chloroform, opium, or belladonna. In obstinate cases, especially when the sphincter is hypertrophied, it becomes necessary to divide the muscle, which should be done on one side, towards the ischium. This usually succeeds in relieving the complaint, but in hysterical cases the benefit is not always permanent. In an unmarried girl upon whom I performed the operation, relief was experienced for a time; but some months afterwards she called on me again, complaining of her old symptoms. In these cases attention must be paid to the uterine functions. Steel medicines, the shower-bath, and sea-bathing, will be found beneficial.

CHAPTER IV.

HÆMORRHOIDS.

THE hæmorrhoidal veins distributed in the submucous tissue at the lower part of the rectum form a plexus which surrounds the bowel just within the internal sphincter. The veins are best seen when somewhat congested, their deep purple hue being very apparent through the thin mucous membrane with which they are in close contact. The plexus is then seen to be about three-quarters of an inch in length, and composed of veins of various sizes, arranged for the most part lengthwise and in clusters, being especially collected in the longitudinal folds of the rectum. The plexus does not extend lower than the external sphincter, but branches from it, passing between the fibres of the internal sphincter, descend along the outer edge of the former muscle, close to the integuments surrounding the anus.

These hæmorrhoidal veins are very liable to become dilated and varicose, giving rise to the disease termed *hæmorrhoids* or *piles*. When the plexus beneath the mucous membrane within the external sphincter are thus affected, the hæmorrhoids are said to be *internal*: when the veins beneath the integuments outside the

muscle are enlarged, the hæmorrhoids are called *external*. Both external and internal piles very frequently co-exist. Where this is the case, on laying open the anus and rectum the distinction between the two is very marked, the external sphincter forming a narrow band separating the internal from the external piles, which appear arranged in rows one above the other. The changes in structure consequent upon hæmorrhoids vary a good deal. In internal piles the veins of the plexus are irregularly dilated, and are filled in spots with dark coagula, which are often compact and hard. A section shews a number of veins of different sizes, mostly plugged with clots. A bunch of varicose veins, crowded in the lower ends of the longitudinal folds, produce prominent projections of the mucous membrane, and deepen the pouches between the folds. In addition to these elevations, a number of small dilated veins sometimes form in the short columnar projections described at page 6. Two or three of the larger prominences of the longitudinal folds meeting below coalesce, so as to form a transverse fold just within the sphincter. In old cases the mucous membrane and submucous areolar tissue become greatly hypertrophied. Thus are developed elongated processes of a polypus form, which grow as much as one inch in length, and projecting transverse folds, which I have known to measure one inch and a half in width. Not unfrequently there are two or even three transverse elevations of smaller size. The arteries likewise enlarge considerably. The mucous membrane involved

in internal piles is not only thickened, but extremely vascular. The disease is not always confined to the smaller veins at the extremity of the rectum, but, as it makes progress, the larger veins higher up the rectum also become varicose.

The dilated veins of external piles are better covered than those within the sphincter. In the early stage, before the integuments have become thickened, there is a softish elevation in the skin, near the margin of the anus, of a slight blue tinge, being nothing more than swelling from a varicose vein. At a later period, a projecting fold of skin, with a broad base, encloses a vein more or less dilated, and filled with a dark coagulum. A thick fold of this kind, when cut, sometimes exhibits a congeries of small varicose veins, many of them distended with clots. A number of such hæmorrhoidal excrescences frequently form a ring around the anus. Inflammation spreading from the coats of the veins causes the skin and areolar tissue covering them to become thickened and hypertrophied. Lymph is sometimes effused into varicose veins, and leads to their obliteration, after which the folds shrivel up, and become reduced to small flaps, which give the patient no further trouble. In some instances, elongated flattish folds may be observed springing from the margin of the anus at the point of junction of the mucous membrane and skin, the outer surface of the fold being covered with a membrane resembling the delicate skin at this part, and the inner surface lined with an extension of the mucous membrane, small veins being visible

through it. These growths hold an intermediate place between internal and external piles.

It appears that repeated distension of the hæmorrhoidal veins from causes about to be described, renders their coats weak, and that, under a repetition of congestions, the vessels yield, and become permanently varicose. They also *grow* larger, being not only dilated, but elongated and tortuous. Their coats, and the areolar tissue around them, become thickened, as in varix of the legs. The arteries supplying the part also acquire a greater development, the lower part of the rectum becoming in every respect a more vascular and organized structure, though not of the character of erectile tissue or nævus, which piles have been erroneously supposed to resemble. At the same time the textures covering the veins, the skin and mucous membrane, are hypertrophied in folds.

Hæmorrhoids is a disease of middle and advanced age. They rarely occur before puberty, and but few persons in after-life altogether escape them. All those circumstances which determine blood to the rectum, or impede its return from the pelvis, tend to produce this disease. Drastic purgatives; the accumulation of fæces occurring in constipation; the strain on the coats of the veins taking place in protracted and forcible defecation, and in efforts to void the urine when the passage for it is obstructed; the impediments to the circulation caused by the gravid uterus or a greatly enlarged prostate gland; abdominal tumors pressing on the inferior mesenteric vein; disease of the liver interrupting the

portal circulation, may all be regarded as causes of hæmorrhoids. There is, no doubt, in many persons a natural predisposition to the complaint, which is then produced by slight causes. But a predisposition is more frequently acquired by sedentary habits, indulgences at table, and excitement of the sexual organs, which explains the well-known circumstance that hæmorrhoids are more prevalent in the higher classes of society than amongst the labouring population. The latter take plenty of exercise, live a good deal in the open air, and are little liable to constipated bowels. Hæmorrhoids, though a very common disease in both sexes, occur more frequently in males than in females. Few women, it is true, bear children without becoming in some degree affected by them ; but the urinary and genital disorders of the other sex, combined with freer habits of living, are still more fertile sources of piles.

The symptoms produced both by external and internal piles vary a good deal in different subjects, and in different stages of the complaint. External piles cause a feeling of heat and tingling at the anus. A costive motion is followed by a burning sensation, and the excrescence becomes slightly swollen and tender on pressure, so as to render sitting uneasy. This congested state of the pile may pass off or lead to inflammation, accompanied with considerable enlargement of the hæmorrhoid, forming an oval tumor, red, tense, and extremely tender. The inflammation may subside, or go on to suppuration. When the matter is discharged, a clot of blood escapes with it, the abscess closes, and

the dilated vein is usually obliterated, the pile being reduced to a small flap of integument. Occasionally the opening remains fistulous. The irritation produced by costive evacuations, or by friction in sitting and cleansing the part, sometimes produces ulceration on the inner surface of the pile, and a sore, which extends a little within the circle of the sphincter. This is liable to occur particularly to those growths at the margin of the anus, which I have described as holding a middle place between internal and external piles. The pain in these cases is rather severe, a burning sensation lasting for an hour or two after defecation, and the sitting posture is at all times painful. The suffering, however, is not nearly so great as that occasioned by the irritable ulcer. External piles rarely give rise to bleeding to any great extent.

Internal piles, when slight, may exist for years, causing little inconvenience besides slight bleeding after a costive motion; and occasionally a feeling of fulness, heat, and itching, just within the anus. If only small, they protrude slightly with the mucous membrane in defecation, returning afterwards within the sphincter. When of larger size, the piles always protrude at stool, and require to be replaced, the patient usually pushing them up with his fingers. In a lax state of the sphincters, they come down, even when the patient stands or walks about, so as to prove exceedingly troublesome, and to interfere with his taking walking exercise. When thus exposed to view, they appear of a rounded form, and often of a deep purple or violet

hue, have a soft feel, and are evidently very vascular, bleeding readily when handled. If free from congestion, they exhibit a florid red colour with a rough granular surface. In consequence of the irritation from pressure and friction to which the protruding piles are liable, their mucous surface becomes tumid and abraded, and furnishes a free mucous discharge tinged with blood, which soils the linen. They are often so sore that the patient is obliged to keep in the recumbent posture, the pressure in sitting causing great uneasiness. This is more particularly the case when the extremity of an elongated pile, forming a small rounded tumor, of a bright red granular aspect, constantly projects at the anus. A swelling of this kind is always more or less painful, and when inflamed or ulcerated is the seat of a sharp burning pain. Large piles within the sphincter, when swollen from irritation, sometimes occasion a sensation as if a foreign body were lodged in the part.

The symptoms produced by internal hæmorrhoids are not always confined to the seat of disease. Irritation frequently extends to the urinary organs, the patient being occasionally troubled with a frequent desire to pass water, and even with difficulty in voiding it, from spasm at the membranous part of the urethra. On the other hand, disease of the urinary organs is a very common cause of hæmorrhoids. The connection, indeed, between piles and disorders of the urinary organs is a matter of considerable practical importance; and the surgeon should be careful to ascertain the ori-

ginal and chief source of the patient's sufferings. Persons with stricture in the urethra, stone in the bladder, or enlargement of the prostate gland, are accustomed to strain so much in passing water, that they are frequently unable to employ the bladder without at the same time relieving the rectum; and the disturbance in the circulation through the hæmorrhoidal veins produced in this way very often gives rise to piles. After the cure of the stricture in the urethra, or the removal of the stone from the bladder, the inconvenience suffered from the hæmorrhoids often ceases without any treatment particularly directed to the latter complaint. But the more frequent, and more severe and permanent complication is that of enlargement of the prostate, with hæmorrhoids; for not only are the hæmorrhoidal veins affected by the forcible efforts to relieve the bladder, but the enlarged gland, by obstructing the circulation in the larger veins, tends materially to promote the formation of piles. The veins of the hypertrophied prostate are always large and numerous, and communicate freely with the hæmorrhoidal; so that in congestion of the former the latter must more or less participate. Accordingly, few persons suffer from enlargement of the prostate without being also troubled with piles; and feeling a sense of weight and bearing down in the rectum, they are liable to attribute their symptoms to internal hæmorrhoids, instead of to the disease of the prostate gland.

Persons subject to piles frequently suffer no inconvenience from them until, irritated by an unusually costive

motion, or by a smart purgative, or under the excitement of wine, the growth becomes congested and inflamed. They then have what is termed an "attack of piles,"—that is to say, they suddenly experience a sensation of heat, weight, and fulness, just within the rectum, followed by considerable pain at stool, and sometimes irritation about the bladder. These symptoms, which are often attended with febrile disturbance, arise from inflammation and swelling of the piles, which afterwards subside, but not always without leaving some permanent enlargement of the growths.

Internal as well as external piles are liable to inflame and suppurate, the matter forming a small abscess in the fold, which, bursting at its extremity, sometimes leaves a small fistulous opening. This gives rise to the discharge of a small quantity of pus, which appears as a dirty yellow stain on the linen, and leads the surgeon to suspect the existence of a blind internal fistula. On examination with the speculum, the opening in the pile may be discovered, and a probe passed into it goes to the bottom of what proves to be a blind sac, but which does not extend to the areolar tissue external to the rectum, and is not to be regarded and treated as a blind internal fistula, the removal of the growth being sufficient for the cure of this kind of fistula. I recently examined a specimen of fistula in ano, combined with large internal hæmorrhoids, which were riddled with numerous minute holes, leading to blind sinuses confined to the excrescences.

When internal piles of some size protrude at the

anus, they are liable to be constricted and strangulated by the external sphincter. The contracted muscle impedes the return of blood, and occasions inflammatory swelling of the piles, until at length they become strangulated and mortify. In this way hæmorrhoids of large size are said sometimes to slough off, the patients being cured of the annoying complaint by a sort of natural process. An occurrence of this kind is attended with a good deal of pain and suffering, but is free from danger. In the cases which I have met with, the extremities only of one or two of the larger hæmorrhoidal growths perished, and the patients, though experiencing relief, were by no means cured of the disease.

One of the most common symptoms of internal hæmorrhoids, indeed that from which the name of the complaint is derived, is hæmorrhage, which occurs when the bowels are evacuated. The bleeding varies greatly in amount. Sometimes the motions are merely tinged with a few drops of blood: in other instances the quantity lost is considerable, several ounces being voided at stool. The bleeding may be irregular, occurring only after costive motions, or in certain states of health; or it may take place daily, going on even within the bowel, and producing the usual symptoms of derangement from continued losses of blood. Thus the complexion becomes blanched, and the lips appear waxy. The patient loses flesh and strength, has a quick and small pulse, suffers from throbbings in the temples, palpitations, and difficulty of breathing on making the slightest exertion, and at length finds his legs and feet

swollen from œdema. The character of the bleeding occurring in piles also varies: it is sometimes venous, sometimes arterial. There are some persons who, without suffering any other inconvenience from a varicose state of the hæmorrhoidal veins, become liable to discharges of blood from the rectum, either at regular periods, or whenever, from good living or want of exercise, the habit is fuller than usual. In these cases from three to six ounces of blood, or even more, come away at stool, following the fæcal evacuation; and the blood which is voided is of a dark colour, and evidently venous. Such habitual hæmorrhoidal discharges are not uncommon in plethoric persons. I have a patient, a stout gentleman, upwards of seventy years of age, who has been subject to periodical discharges of blood from the bowels for many years, usually in the spring and autumn. After lasting a week or ten days, they generally ceased spontaneously, but not always; and when feeling faint and weak from their continuance, he has been in the habit of arresting them by injections of cold water. The discharges have now ceased for a year and a half, but for the last twelve months his urine has been albuminous. Periodical losses of blood of this character from the hæmorrhoidal veins relieve congestion of the liver and kidneys, help to ward off attacks of gout, and prevent fits of apoplexy. They are not, therefore, to be interfered with, unless, by their long continuance, they are exhausting the patient's powers. In many persons and states of constitution, and habits of life, they are rightly regarded as safely-valves. These

discharges, though hæmorrhoidal, cannot, perhaps, be strictly regarded as proceeding from hæmorrhoids, there being no change in the condition of the veins amounting to disease. It sometimes happens, however, that persons, after suffering from an attack of piles for a few days, have a pretty free discharge of blood from the rectum: the bleeding shortly ceases, and they find all their symptoms removed. This hæmorrhage is also venous. The escape of blood from the hæmorrhoidal veins, whether by exudation or rupture it is difficult to say, unloads the congested and inflamed vessels, and thus the patient gets relief. But the bleeding which most commonly occurs from internal piles is undoubtedly arterial, taking place from arteries enlarged by the disease. The vessels on the spongy surface of the mucous membrane readily give way when blood is determined to the part in defecation, or when abraded by the passage of the fæces. An artery of some size in the submucous tissue may be exposed by ulceration, and continue for some time to pour out blood, weakening the patient, and giving rise to the symptoms above described. On examination, the surgeon may discover a red fungous-looking mass, from which the bleeding is seen to proceed; and sometimes a small artery may be observed at the apex pumping out blood. The blood voided has a bright arterial colour. That hæmorrhage of this character is good for the health is quite a mistaken notion; and it is important that the practitioner should distinguish the bleeding taking place as a consequence of local disease, from that which arises from a

constitutional plethora or congestion of the internal organs.

When piles are small, and cause but little inconvenience, the treatment is very simple. In all instances attention should be paid to the habits of living. Patients should take wine in moderation, and regular exercise in the open air, and avoid sitting too long at the desk,—I say at the desk, because it is by prolonged occupation in this way that hæmorrhoidal complaints are often induced, which explains why literary persons so often suffer from them. The lounging chairs which are in such general use afford a better position. The bowels must be carefully regulated, so as to avoid hard and costive motions, as well as an undue action of the bowels. Irritating the rectum by repeated purging is sometimes even more hurtful than constipation. In cases of external piles the parts should be sponged night and morning with cold water, or bathed with an astringent lotion of alum or sulphate of zinc. When external piles are inflamed the patient must keep the recumbent posture. If there be merely one of no great size it is a good plan to open the swelling freely with a lancet, and then to squeeze out the dark coagulum. The inflammation afterwards subsides, the vein becomes obliterated, and the pile shrivels up to a small fold. When several piles are affected, the common practice is to apply a few leeches, and to direct the parts to be well fomented and poulticed, and after the inflammation has subsided to recommend the excision of the growths, to prevent the patient being again troubled with them.

The excision of inflamed piles is a very painful operation; but since the introduction of chloroform, I have occasionally, in order to save time, removed them in this condition, the patient being placed under its influence. The bleeding after the operation relieves the inflammatory symptoms, and the part heals readily afterwards.

The excision of external piles is an easy operation, soon performed, and very effectual. The folds should be seized with the volsellum, drawn out a little, and then removed from the margin of the anus with a curved pair of scissors. A piece of dry lint will generally be sufficient to stop the bleeding, which is rarely of any consequence. If a vessel be seen pumping out blood it may readily be secured with a ligature. For an ulcerated pile excision is the best remedy. I recently removed from a married woman, aged thirty-seven, a patient in the London Hospital, a broad fold at the margin of the anus, the inner surface of which was the seat of rather a large superficial ulcer which extended a little within the sphincter. Though the fold was free from inflammation, she had severe pain for some time after going to stool, and had suffered in this way for seven months. The different practitioners to whom she had applied had treated her without making an examination. She was relieved at once by the operation, and in a fortnight the part was nearly healed, and she left the wards. This broad fold evidently belonged to the growths which hold an intermediate place between internal and external piles, the ulcer

having formed on the mucous surface. The treatment applicable to external piles is proper for these mixed growths. They may be excised without any risk of troublesome bleeding.

In cases of internal piles, half a pint of cold spring water thrown into the rectum in the morning after breakfast has a very beneficial effect on the hæmorrhoids by constringing the vessels and softening the motions before the usual evacuations. The relief afforded by this simple treatment, combined with care in the mode of living, is often remarkable. Persons who have suffered more or less from piles for years have assured me, that they have been quite free from all annoyance from them since they have regularly used the cold water lavements. Some practitioners add alum, the sulphate of zinc, or muriated tincture of iron, to the water, to render the injection more astringent. I believe that in the majority of cases cold water will answer every purpose. I have used, however, in bad cases, the decoction of oak bark with alum with much advantage. As an aperient, there is nothing better than the linitive electuary with sulphur, or the bitartrate of potass, which should be taken at bed-time, so as to ensure an action of the bowels in the morning. The confection of black pepper, better known as *Ward's paste*, has long been in great repute as a remedy for piles, and there can be no doubt that it exerts a beneficial influence on the complaint. The usual dose is a drachm three times a day. This preparation is supposed to pass through the alimentary

canal but little altered, and on reaching the rectum to act directly on the piles as a stimulating application. It does not seem a very scientific kind of practice to recommend patients to swallow a composition of pepper which is to produce no effect until it reaches quite the other extremity of the alimentary canal; and Sir B. Brodie relates that a patient of Sir Everard Home, taking this view of the matter, crammed as much as he could bear of it up the rectum, which, it is reported, had the effect of curing him. Sir E. Home afterwards used it as a local application in some other cases with manifest advantage. The cubebs pepper taken internally seems to relieve piles much in the same way as the confection of black pepper. I am not much in the practice of recommending these remedies, preferring to act more directly on the seat of disease. When there is a slight slimy discharge, and evidently an unhealthy state of the mucous surface of the hæmorrhoids, I find benefit derived from the application of the mild citrine ointment. The patient may take a little of this ointment on the end of his finger, and, softening it at the fire, apply it to the parts within the sphincter every night. This is a better application than the gall ointment which is so often prescribed. An ointment containing the nitrate of silver is also very beneficial; but the circumstance of its being liable to stain the linen is an objection to its use. I have sometimes applied the solid sulphate of copper with good effect in correcting the granular condition of the surface of the piles: it is less painful than the nitrate of silver, which other-

wise answers the same purpose. In cases where there is much irritation about the rectum, great relief may be derived from the balsam of copaiba, which operates as a mild aperient at the same time that it allays irritation. It may be given in doses of half a drachm, with about fifteen minims of the liquor potassæ, three times a day, in a mixture to disguise the taste. This remedy is so nauseous to many persons that it is not desirable to press their taking it.

When internal piles come down at stool, and require to be replaced, the patient should be provided in the closet with a basin of cold water and a piece of sponge, or soft linen rag, to apply to them. It may happen that in consequence of the protruded piles becoming a little inflamed, or more congested than usual, the patient finds himself unable to return them, and requires assistance. The surgeon should direct the patient to lie down on a sofa, and should endeavour by gentle pressure to empty the piles of blood, and then to push them back within the sphincter, in which he will generally be able to succeed if the hæmorrhoids have not been long down. They may, however, have become much swollen and congested, and be found tightly constricted by the sphincter. In this case, the piles should be punctured in several places with a needle, and afterwards bathed with cold or iced water, and the patient should be directed to remain in the recumbent posture. In a short time, the tension and swelling having subsided, the piles will very probably slip up without difficulty. If the protrusion have been stran-

gulated for some time, and sloughing have already commenced, the surgeon ought not to interfere with them : fomentations and poultices should be applied, and attention must be paid to the general state of health, and the sufferings must be relieved if necessary by opiates.

Internal piles, when of such a size as to protrude at the anus, or when subject to inflammation, ulceration, and bleeding, so as to prove a constant source of annoyance and suffering, must be removed by operation. This may be done by excision, by cauterisation, or by ligature. Excision is the quickest and least painful of these proceedings ; but there have been so many instances in which dangerous hæmorrhage has occurred after the removal of internal piles with the knife, that few good surgeons now advocate the operation, or venture to perform it. Several eminent operators who have tried excision have acknowledged that they have been obliged to abandon the practice, in consequence of the serious risks which some of their patients incurred from bleeding. Dupuytren, who was an advocate for excising piles, used frequently to have recourse to the actual cautery to arrest the hæmorrhage which ensued ; and it is well known that Sir Astley Cooper had some fatal cases in consequence of bleeding after this operation.

Mr. Colles, of Dublin, was in the habit of transfixing the base of the tumors with a hook before excising them, to prevent their being drawn up within the sphincter, which enabled him to command a view of

the parts, in the event of any vessel requiring to be tied.* This mode of securing the parts affords some advantage to the operator ; but it often happens in this operation, that, although the bleeding may be comparatively slight at the time the piles are cut off, a large quantity of blood escapes in the course of a few hours afterwards, and gradually accumulates in the rectum. Dieffenbach's plan is preferable to the preceding. He first passed a ligature through the base, and grasping the pile with the forceps, excised it between the forceps and the ligature, which was then tied. The pressure produced by bringing the edges together assists in preventing hæmorrhage. Small elongated piles can be removed in this way without risk.

Internal piles admit of removal by cauterisation. Dr. Houston, of Dublin, in a paper published in 1843,† strongly recommended the use of nitric acid for the cure of the florid vascular pile ; and I have since employed this escharotic in cases of the kind. It has the advantage of being a safe and mild remedy, and is certainly well adapted for destroying the bright fungous-looking pile which is so often the source of hæmorrhage, and the cause of much local uneasiness. Means having been taken to bring the pile well into view, the patient should lean over a table, and his nates should be separated by the hands of an assistant. The surgeon may then take a glass pen, such as is now common in the shops, with rather a large aperture at

* Dublin Hospital Reports, vol. v.

† Dublin Journal of Medical Science, vol. xxiii.

the point, and, having dipped it in concentrated nitric acid, so as to load the bulb of the pen, may apply the escharotic to the entire surface of the hæmorrhoid, until its florid hue becomes quite changed to an ash colour. No speck of red should be allowed to remain. Care must be taken that none of the acid touches the skin at the margin of the anus. The moisture on the surface having been absorbed with lint, and the part smeared with sweet oil, the protrusion may be replaced within the sphincter. The pain consequent on the application is not severe, and the separation of the superficial slough and healing of the sore occasioned by the acid are attended with scarcely any uneasiness. If the pile be not large, this plan answers very well, but it is not sufficient for the removal of hæmorrhoidal flaps and tumors of any great size.

For the cure of internal hæmorrhoids of any considerable size the ligature is the safest and most effectual remedy. In order to apply the ligatures properly, it is necessary to promote the protrusion of the piles. For this purpose, a dose of castor oil should be given about six or eight hours before the time fixed for the operation; and a pint of warm water should be thrown into the rectum shortly before the surgeon's arrival. When the fluid is discharged the piles will descend. The application of the ligature being a somewhat painful proceeding, chloroform may be given if the patient desire it. The operation should then be performed, the patient lying on the side with the thighs raised: otherwise the most convenient position is with

the body leaning over a table, and the nates separated by an assistant. The growth to be tied should be seized with the volsellum, and drawn out. If the pile be an elongated one, a ligature may be tied tightly round its base. In other cases a curved needle set in a handle, with the eye near the point, and armed with a strong silk ligature, should be passed through the base of the pile from without inwards. The needle is then to be withdrawn, the ligature being left double. The loop being divided, the pile is to be strangulated by drawing the ligatures close round the base, and knotting them as tightly as possible on each side. The other piles are afterwards to be treated in the same way. When the hæmorrhoids are large in size, a notch made with scissors on each side at the part to be girt with the ligature, just before it is tightened, will facilitate the separation without any risk of bleeding. The ends of the ligatures having been cut short, the strangulated piles should be gently pushed up into the rectum. If the operation have been performed without chloroform, a strong opiate may be given at its conclusion. Any swelling and heat about the anus that may afterwards arise must be relieved by poultices and fomentations. No aperient should be given for several days. The tighter the ligatures are tied, the sooner they ulcerate through and come away. They generally separate in about four or five days, during which period the patient should remain in bed or on the sofa. The detachment of the sloughs leaves, of course, at the lower part of the rectum a sore surface,

which bleeds slightly when the bowels are relieved, and some attention will be required until this heals. The motions must be kept soft by mild aperient medicine,—as the linitive electuary, or castor oil. If the sore be slow in healing, it may be smeared night and morning with a liniment consisting of a drachm of the *liquor plumbidiacetatis* and an ounce of the confection of roses; or it may be brushed over with a weak solution of the nitrate of silver.

The sufferings of the patient after the application of the ligatures vary a good deal, according to the extent of the parts strangulated and the irritability of the constitution. In some cases, even where no chloroform has been taken, after the soreness consequent on the tightening of the ligatures has passed off, very little further uneasiness is experienced. In other instances the pain is severe and continued, and accompanied with restlessness and want of sleep, requiring repeated doses of opium for its relief. There is this great advantage from chloroform, that after consciousness returns, the anæsthetic influence of the remedy does not altogether subside, but the patient suffers less afterwards from the ligatures. The irritation sometimes produces retention of urine, and the passage of a catheter may be required. A hip-bath, in addition to an opiate, will relieve the urinary symptoms.

If the surgeon, when tying internal piles, should observe any external to the sphincter, he will do well to excise them at the same time. If the patient be under the influence of chloroform, this does not in the least

add to the severity of the operation, and it will probably save a good deal of suffering afterwards, as the irritation produced by the tight ligatures is very liable to cause the external piles to inflame. A few years ago, a young clergyman in the country, who had suffered severely from piles, took lodgings in town, to undergo the treatment necessary for their cure. As he was troubled with both internal and external hæmorrhoids, I recommended the former to be tied and the latter removed with the knife. Being a timid man, and finding that his sufferings proceeded almost entirely from the internal piles, he would only consent to my operating on these. The consequence was, that the irritation excited by the ligatures caused the external piles to inflame and swell excessively; and this added so much to his distress, that on the third day after the operation I was obliged to excise them. Fortunately, chloroform saved him from what would otherwise have been a most painful operation, in the inflamed state of the parts. He afterwards did quite well.

Ordinary bleeding from piles may be stopped by an injection of cold or iced water, or some astringent solution; but when the hæmorrhage is continued, following every evacuation and weakening the patient, other measures must be taken to arrest it. I have already alluded to the prejudice which exists against interfering with bleeding piles, from the belief that the loss of blood is good for the general health, or that danger may be incurred in stopping an habitual discharge. On this ground bleeding is sometimes allowed

to go on to an injurious extent before recourse is had to surgical assistance; but arterial hæmorrhage from piles is quite another matter from the occasional or periodical venous discharges to which many persons are liable. In cases of hæmorrhage, the shortest and most effectual plan is to seize the pile, or bleeding extremity of it, with the tenaculum, and include the part in a ligature; but, in consequence of an irritable condition of the sphincter, there may be difficulty in reaching the part, and much opposition to the introduction of a speculum, without at least the assistance of chloroform. Under these circumstances, the surgeon may introduce a pencil of nitrate of silver, and make a free application of it to the surface, which will often have the desired effect. The most distressing cases of piles met with in practice are those in which there is not only important hæmorrhage, but ulceration on the surface, forming a painful and irritable sore. The following example will illustrate the difficulties of such cases, and indicate the treatment necessary in dealing with them.—On the 8th of November, 1845, a married lady, naturally of delicate constitution, and in impaired health from repeated miscarriages, noticed a rather free discharge of blood after a costive motion. She had been troubled by an internal pile for some years, and had just returned from the sea-side, where she had suffered severely from it. A dull pain had been felt in the lower part of the back after walking exercise. The uneasiness sometimes came on at night, lasting several hours, and disturbing her rest. She also

suffered acutely for about an hour after every evacuation, and the motion was followed by a pale yellow discharge. Her spirits became much depressed; she lost appetite, and returned to town in worse health than when she left home. In a few days afterwards the bleeding occurred. I made an examination; and with some trouble, owing to the tender condition of the parts, got sight of a florid-looking pile rather deeply seated. I applied the lunar caustic pretty freely to the inflamed and ulcerated surface. The pain of the application lasted several hours. To my disappointment, there was a return of the bleeding after the next motion. Cold water and astringent injections were administered twice a day; but the bleeding still continued. A surgeon who saw the case with me on the 11th, suggested another free application of the caustic, which was made with some difficulty, owing to the painful spasm of the sphincter, but with no better effect than before. She took the acetate of lead, gallic acid, and had strong astringent injections of various kinds, but without arresting the bleeding, which, though not copious in amount, but occurring once or twice in the twenty-four hours for several days, had rendered her anæmic, and much reduced the strength in her enfeebled state of health. At a consultation held on the 14th it was determined that an attempt should be made to tie the pile. The resistance of the irritable sphincter having been overcome by force, and the lower part of the rectum partly everted, the pile was seized and dragged down, and, with some diffi-

culty, a ligature was tightly secured round its base. The pain of the operation was excruciating, and it was necessary to give a drachm of laudanum immediately afterwards. The treatment, however, was quite effectual; there was no return of the bleeding. The lady regained her health, and has not been troubled with piles since. Had the properties of chloroform been known at that time, the treatment of the case would have been much facilitated, and the acute suffering prevented.

The extirpation of hæmorrhoids by ligature is both an effectual and a safe mode of treatment, and the use of chloroform removes almost entirely the pain attending it. Those adverse to the plan have magnified the risks and sufferings, and have spoken of phlebitis, and tetanus, and diffuse inflammation followed by sloughing, as common occurrences after the operation. No fatal case has come under my own notice, either in public or private practice. Some amount of danger must be incurred in every kind of operation, serious results sometimes arising from the slightest causes; and the tying of piles cannot be expected to be exempt from risks which may attend a trifling puncture in the finger. But an unfortunate result from the application of ligatures to piles is entirely exceptional; and, with common precautions, this proceeding must be regarded as safe as any operation in surgery.

The symptoms of hæmorrhoids appear to admit of some temporary relief from mechanical pressure. For this purpose, bougies and metallic plugs have been re-

commended by some practitioners to be introduced into the rectum, and retained there for a certain period daily. The principle of giving support to weak and dilated veins by mechanical means, is of the utmost value in surgery, but it is obviously impossible to apply this with effect to the hæmorrhoidal veins; and, though benefit is said occasionally to have been derived from the instruments alluded to, the relief is too slight and transient, and the treatment of too disagreeable a character, to render the plan of any value in practice. In persons, however, advanced in life, with a weak sphincter and relaxed rectum, especially in men with enlargement of the prostate gland, the hæmorrhoidal folds slip down so readily when the patient stands or walks about, that it is often necessary to adopt some mechanical means to support them, and prevent their protruding. Such measures are chiefly required in cases where the patient is very reluctant to undergo an operation, or is an unfit subject for one. The instruments in common use consist of a steel band to encircle the pelvis, from the back of which a slightly curved spring descends to a point corresponding to the anus, at which extremity a conical ivory or India-rubber pad is attached. The pad, pressed upwards by the spring, supports the rectum, into which it slightly enters. Some of these instruments possess the advantage of not being exposed to displacement in the changing positions of the body, the back spring being only loosely attached to the circular band. M. Bourjeaud, of Davies Street, has recently contrived a

hollow India-rubber supporter of a pear shape, which, being introduced into the rectum collapsed, can be afterwards inflated through a long narrow tube communicating with the interior of the ball. This apparatus effectually prevents protrusion taking place, and gives a considerable amount of support to the varicose hæmorrhoidal veins. In some instances a good deal of comfort has been derived from the use of this instrument ; but there is some trouble in the management of it, which makes it unsuited for persons who are infirm and aged ; and the retention of a foreign body in the rectum cannot always be borne without inconvenience.

CHAPTER V.

PROLAPSUS OF THE RECTUM.

IN describing the changes produced by hæmorrhoids, I remarked that, in relaxed states of the sphincter muscle and coats of the bowel, the hypertrophied folds frequently slip down and protrude at the anus. The descent of these growths is commonly attended with more or less eversion of the mucous membrane of the lower part of the rectum, similar to what takes place, although in a slighter degree and only temporarily, in the ordinary actions of defecation. This protrusion and exposure of the thickened mucous surface are erroneously described by writers as a prolapsus of the rectum. In the true prolapsus, however, there is a great deal more than an eversion of the internal surface; the bowel is inverted; there is a "falling down" and protrusion of the whole of the coats—a change in many respects analogous to intussusception, but differing from it in the circumstance, that the involved intestine, instead of being sheathed or invaginated, is uncovered and projects externally.

The length of bowel protruded in prolapsus varies greatly, from an inch to six inches, or even more. The shape and appearance of the swelling depend partly

upon its size, and partly upon the condition of the external sphincter. When not of any great length the protrusion forms a rounded swelling which overlaps the anus, at which part it is contracted into a sort of neck. In its centre there is a circular opening, communicating with the intestinal canal: an inversion of greater extent usually forms an elongated pyriform tumor, the free extremity of which is often tilted forwards or to one side, and the intestinal aperture assumes the form of a fissure receding from the surface of the tumor, owing to the traction exerted upon it by the meso-rectum. In a relaxed condition of the sphincter the surface of the protrusion has the usual florid appearance of the mucous membrane; but in other cases it is of a violet or livid colour, and tumid from congestion, the return of blood being impeded by the contracted sphincter. The exposed mucous membrane is often thickened and granular, and sometimes ulcerated from friction against the thighs and clothes. A thin film of lymph may be occasionally observed coating its surface. On examining a section of a large prolapsed rectum taken from the body of a child, I found the coats of the protruded bowel greatly enlarged; the areolar tissue was infiltrated with an albuminous deposit, the muscular tunic hypertrophied, and the mucous membrane much thickened and dense in structure, especially at the free extremity of the protrusion. These changes are sufficient to account for the difficulty in reducing the parts, and in retaining them afterwards, which is so often experienced in the treatment of these cases in children,

the bowel having become too large to be conveniently lodged in its natural position, and, like a foreign body, exciting the actions of expulsion. I believe that in all cases of prolapsus in which the parts are suffered to remain unreduced for any time, the coats of the extruded bowel will be found thickened and hypertrophied, from the irritation to which they are exposed in this condition.

Prolapsus of the rectum occurs most frequently in children, but is occasionally met with at a later period in life. In infancy it is produced by protracted diarrhœa; the frequent forcing at stool so weakening the coats and connections of the rectum as at length to lead to inversion of the bowel. The straining efforts to pass water consequent upon stone in the bladder, also often give rise to this affection in early life. In adults the descent results chiefly from a weakened condition of the sphincter and levator ani muscles, and a general relaxation of the tissues of the part. In these cases, the rectum being imperfectly supported by the perineum, the eversion at stool gradually extends, until an actual inversion takes place, which may increase until it forms a protrusion of considerable size. This form of prolapsus is more common in women than in men. In the former, it results in a great measure from weakness in these parts produced by repeated child-bearing. The extent to which the sphincter sometimes admits of dilatation in women, and the amount and size of the parts falling through it, are really remarkable. There is a preparation in the Museum of the

College of Surgeons,* consisting of a considerable portion of the rectum inverted and protruded through the anus, forming a tumor of nearly hemispherical form, between three and four inches in diameter. The mucous membrane of the rectum is thickened and extensively ulcerated; the opening through which the parts are protruded is of great size; there is also some degree of prolapsus of the uterus, with inversion of the vagina. A few years ago I was asked to visit a poor Jewess in Petticoat Lane, the mother of several children, who had a prolapsus of the rectum which formed a round tumor the size of a child's head of two or three years of age. There were large ulcers on the surface; the anal orifice was dilated to an enormous extent. She was in a miserable condition, being unable to pass her water or to evacuate her bowels without forcing up the protruded parts, which slipped down the moment her hands were removed from the swelling. A prolapsus may be combined with internal piles. We meet with this in men affected with enlargement of the prostate or stricture, and who are accustomed to strain in passing water. This frequent forcing, as well as the habitual protrusion of the hæmorrhoidal folds, so weaken the sphincter and relax the coats and connections of the rectum, as ultimately to cause displacement and inversion of the bowel. In these cases the hæmorrhoids will be observed encircling the upper part of the protrusion near the anus.

* No. 1382.

The annoyance and inconvenience occasioned by a prolapsus of the rectum vary considerably under different circumstances. Thus the bowel may descend only in a very slight degree at stool, and disappear by a natural effort afterwards; or it may come down only occasionally, admitting of being easily thrust back, and, when returned, will remain in its place until an attack of diarrhœa, or the effort to pass a costive motion, causes it to fall again. It sometimes appears after every motion, and even when the patient stands and moves about, forming a large red unsightly tumor exposed to friction, feeling sore, and soiling the linen with a bloody discharge, and requiring to be pushed up frequently during the day. Or it may be constantly protruded, the gut being fixed so as not to admit of replacement. There are cases on record in which a large prolapsus has become strangulated and inflamed, and has even mortified and sloughed off; similar to what sometimes happens to an invaginated intestine. All the worst forms that I have met with have been amongst the neglected children of the poor. Young persons generally outgrow this complaint by the period of puberty; and, common as prolapsus is in early life, it is very rare in young grown-up subjects. I have known, however, of persons who have had this disease in infancy becoming affected with a return of it in later life from the effects of a diarrhœa.

In children diarrhœa must be checked, and the action of the bowels regulated, by suitable remedies. In slight cases it will be sufficient to direct the nurse,

when the rectum descends at stool, to place the child on its face across her lap, and to return the parts by taking a soft cambric handkerchief or sponge, wetted in cold water, in both hands, and by gentle, but steady compression, to push the protrusion back into the pelvis. The relaxed state of the membrane may be corrected by administering regularly every evening an astringent injection, which may remain in the bowel during the night. I usually prescribe the decoction of oak bark, with alum, in the proportion of a scruple of the latter to eight ounces of the decoction, a third of the quantity being sufficient for use. From twenty to thirty minims of the muriated tincture of iron, added to four ounces of water, also makes an excellent astringent enema for these cases. The injections should be used cold. If the bowel should slip down when the patient moves about, mechanical support must be given to the part. A well-fitting rectal supporter, worn constantly for a certain period, will be of great service in maintaining the bowel in its place. When from swelling and thickening of the coats of the rectum the intestine becomes almost fixed in its unnatural position, there is greater difficulty in the management of the case. Continued and pretty strong pressure will be required to replace the bowel. If the struggles of the child should cause much resistance to the efforts of the surgeon, the influence of chloroform will facilitate matters, and have a good effect in relaxing the sphincter, rendering unnecessary the division of the muscle, which has been recommended in cases, both of children and of adults,

where much difficulty is experienced in replacing the bowel. When the exposed surface is ulcerated, benefit may be derived from painting the diseased part with a solution of the nitrate of silver. The chief difficulty, however, is to retain the parts after they have been reduced. A good-sized piece of sponge may be lodged at the anus, and firmly secured there by approximating the buttocks, by means of a broad strip of adhesive plaster applied across from one side to the other, and further secured with a T bandage. This will require to be readjusted after every motion. The child should also be kept at rest in bed until the strong tendency to prolapsus has in some measure subsided. Afterwards the usual bandage may be applied, and the patient allowed to move about. In cases of children with stone in the bladder, the prolapsus generally disappears spontaneously after the operation of lithotomy, and the removal of the original cause of the complaint.

In slight cases of prolapsus, accompanied with internal hæmorrhoids, in adults, the contraction that takes place after the removal of the piles by ligature, or in other ways, will often counteract the laxity of the parts, and afford sufficient support to prevent a return of the inversion. But if this should not be the case, the tendency to prolapsus may be effectually obviated by an operation which consists in the excision of portions of mucous membrane, and a little of the skin from the margin of the anus. The patient being placed on his back in the position usual in the operation for lithotomy, a fold of membrane, more or less broad according to the laxity of the

part, is to be seized with a volsellum, or the curved entropium forceps, raised a little, and then excised with a curved pair of scissors. Two portions, one from each side of the rectum, will generally require removal, leaving two oval wounds in the longitudinal direction. It is desirable that the edges of the wound should be afterwards brought together with sutures, not only to secure the speedy healing of the wound, but as the compression occasioned thereby helps to arrest bleeding. Unless, however, chloroform be used, there is some difficulty in applying them, in consequence of the forcible contraction of the sphincter excited by the operation drawing in and concealing the wounded parts. The surgeon must be careful to tie any bleeding vessel that may be divided, for the operation is very liable to be followed by hæmorrhage, which may go on into the bowel without his being aware of it. An examination with the speculum should be made before the patient is left. Cases in which this operation is called for are certainly not common. In persons who have suffered from prolapsus in childhood it sometimes happens that the parts do not recover their tone at puberty, and that the complaint continues to prove troublesome afterwards. Such a case is very fit for excision. In 1835 I assisted my colleague, Mr. Luke, in performing this operation upon a lad in the London Hospital. He was nineteen years of age, and had been troubled with prolapsus ever since he was three years old. The bowel always descended several inches when he went to stool, and was a source of great annoyance to him. Two

oval portions of mucous membrane were excised from the verge of the anus in the way above described. The sphincter immediately afterwards contracted strongly, and completely buried the wounded surfaces. There was no reason at the time of the operation to expect any bleeding; but on visiting the lad in the evening, for Mr. Luke, I was surprised to find him in a state of prostration, with a cold, clammy skin, and shivering. It appeared that on two or three occasions he had discharged a considerable quantity of blood, which had collected within the rectum. Having given him some brandy, I introduced a thick plug of lint, previously oiled, which was effected with some difficulty, owing to strong spasm of the sphincter. There was no recurrence of hæmorrhage, and the two wounds healed up in the course of a month. The operation was quite successful in preventing further prolapsus. If another case of hæmorrhage from vessels at the lower part of the rectum occurred to me, I should insert a good-sized piece of sponge, which, expanding as it became moist, would more effectually plug the part.

The operation of excision is also applicable for the cure of prolapsus in women from a weakness of the parts consequent on child-bearing. This weakness is sometimes so great that the fæces, when fluid, escape involuntarily. In these cases, as there is considerable dilatation or elongation of the sphincter, it has been proposed to shorten the muscle by excising a portion of it on each side. The operation is not difficult. The anal ring is to be grasped with a sharp hook or volsel-

lum, and a wedge-shaped portion excised with a small scalpel. The wounds are afterwards to be closed by sutures.

In many instances, the advanced age or state of the general health of the patient renders an operation inadvisable. A proper rectum supporter will help to lessen the inconvenience; and should difficulty be experienced in returning the protrusion, and the patient be obliged to lie down in order to effect it, comfort will be derived from his establishing the habit of relieving his bowels the last thing at night, so that he may retire to rest at once, and remain in a position favourable for the reduction, and prevention of the prolapsus until the morning.

CHAPTER VI.

POLYPUS OF THE RECTUM.

WHEN considering the changes consequent upon hæmorrhoids, I described the hypertrophied folds developed in this disease as sometimes assuming an elongated form, and protruding at the anus. These processes never become pedunculated, but spring from the lower part of the rectum, just within the external sphincter, and are attached by a broad base. Growths, however, occasionally arise from the mucous membrane of the rectum higher up in the passage, being attached by a narrow and elongated pedicle. A tumor of this kind is called a *polypus of the rectum*. It is rather a rare disease, and occurs generally in early life.

In children the polypus usually makes its appearance external to the anus after a stool, resembling a small strawberry, being of a soft texture, granular on its surface, and of a red colour. It has a narrow pedicle about the size of a crow's quill, and two or three inches in length, by which it is attached to the interior of the rectum. It produces no suffering, but requires to be replaced with the fingers when protruded, and causes a very slight bloody discharge, which, appearing after

every motion, excites some alarm. The description of the complaint given by the mother or nurse is liable to mislead the practitioner, and to induce him to conclude that the case is one of a much more common affection—viz., prolapsus. The nature of the complaint can be determined only by an examination of the tumor when protruded. I am not aware that a satisfactory examination has been made of the structure of one of these small polypi; but I presume that it will be found to consist of an hypertrophied growth from the mucous membrane, and that they are analogous, in their mode of formation, to the pendulous tumors occasionally developed from the skin.

The treatment of polypus in children is very simple, and always effectual. The tumor should be strangulated by a ligature secured around the pedicle, and then returned within the bowel. This gives no pain, and produces no suffering afterwards, and the polypus separates and comes away with the motions in the course of two or three days. A polypus should not be excised, as bleeding is liable to occur from the cut surface of the pedicle. This happened, in a case operated on by Sir A. Cooper, to such an extent as to occasion alarm. Nor should the ligature be tied so tight as to divide the soft neck, for hæmorrhage has been known to arise from this cause. Mr. Mayo mentions, that in tying a polypus of the rectum in a girl eleven years of age, he drew the ligature so tightly that it cut through the slender pedicle. There was no bleeding at the time, but the following night the child lost a profuse

quantity of blood, and came to the hospital the following day faint and pale, and reduced, from the bleeding.*

The following case, which came under my notice last year, will serve to illustrate some of the chief points of practical interest in these cases:—A little girl, of sickly appearance, was brought to me in consequence of a swelling protruding at the anus after stool. The nurse described it as resembling a cherry, and stated that it constantly presented after an evacuation, and often required to be pushed back into the passage. It caused no uneasiness, but was attended with a slight bloody discharge. I was unable to induce my little patient to make any straining effort to cause the body to project, and on introducing my finger into the rectum could feel no swelling of any kind. As the parents resided twelve miles out of town, there was difficulty in getting an opportunity of examining the part after a stool. Apprehending that the case might be prolapsus, I prescribed steel medicines, and directed the tumor to be returned with a piece of soft lint, wetted with a solution of sulphate of zinc. I subsequently ordered an injection of the muriated tincture of iron to be administered daily. After paying me two or three visits, the child was taken to the sea-side for the improvement of its general health, and brought to me again on her return. Finding that the projection and discharge were not diminished, I made another examination with the finger, but could find no tumor. I

* Outlines of Human Pathology, p. 354.

ordered a dose of castor-oil to be given early in the morning, and the child to be brought to me afterwards. After she had remained in my house an hour or two, the bowels acted, and I then succeeded in getting sight of a dark red vascular tumor, the size of a small cherry, which protruded at the anus, and had a long narrow pedicle. I passed a ligature round this without difficulty, and returned the strangulated swelling into the rectum. No suffering was produced; and in three days the tumor came away at stool, and the child was cured.

Polypus also occurs in the adult, though less frequently than in children. I lately examined a pedunculated tumor removed by operation, which was of an oval shape, and the size of a chesnut, and had a firm stem about the diameter of a goose's quill. It had the irregular nodular surface of a cauliflower excrescence, and was composed principally of fibrous tissue. I suspect that this tumor had been present in the rectum from childhood, and had since grown and acquired a firm consistence. A tumor of this kind does not bleed, but protrudes at stool, and occasions a slight mucous discharge. It may be safely removed by ligature.

Mr. Syme has described another form of polypus occurring in adults, which is soft, vascular, and prone to bleed. The profuse, frequent, and protracted bleeding which proceeds from this sort of growth renders its removal an object of great consequence. He states that he removed, from a hospital patient, a tumor not less than an orange, which had a most malignant aspect,

and had nearly exhausted the patient by hæmorrhage. In another case, in which the disease was detected from the great hæmorrhage which it occasioned, he could not accomplish protrusion of the tumor, but guided a ligature on the finger, and tied it on the neck within the rectum.* I have not met with any case of this description, which, I presume, must be very rare.

* On Diseases of the Rectum, 2d edit. p. 82.

CHAPTER VII.

FISTULA IN ANO.

THE loose areolar tissue around the lower part of the rectum is occasionally the seat of abscess, which bursts externally near the anus. But instead of the part healing afterwards, like abscesses in other situations, the walls contract and become fistulous, and the patient is annoyed by a discharge from the opening. Such is the complaint termed *fistula in ano*; and though a very common disease, and one, apparently, of very simple character, there are still some points connected with it respecting which a difference of opinion exists.

The abscess giving rise to fistula sometimes forms with all the characters and symptoms of acute phlegmon, suppuration taking place early, and the matter coming quickly to the surface. In other instances a thickening appears at a spot near the anus with scarcely any sign of inflammation, and but little local pain, and is gradually resolved into a fluctuating swelling, which being opened, discharges a fetid pus. On introducing a probe at the external orifice of a fistula formed in either way, it may pass through a small opening in the coats of the rectum into the bowel. The case is then called a *complete fistula*. When there is no internal opening, the

complaint is named *blind external fistula*. The external orifice is usually but a short distance from the anus, its situation being often indicated by a button-like growth; and it is in the centre of this red projecting granulation that the opening is found. The course taken by a fistula varies a good deal. I have a preparation in which the opening is so close to the margin of the anus that the sinus traverses the substance of the external sphincter,—a course which is not, indeed, very uncommon. The abscess, before breaking or being opened, may, however, have burrowed to some distance, and the external orifice may be placed two or three inches off in the direction of the buttock or perineum.

Fistula in ano arises in different ways. It commonly commences in the areolar tissue near the anus as a common phlegmonous abscess; the frequent action of the sphincter muscle, and the disturbance of the part in defecation, afterwards preventing the closure of the sac in the usual mode. This does not, however, always happen. A few years ago, I was asked to examine a robust, middle-aged professional friend, who was troubled with an abscess which had recently burst near the anus. I introduced a probe, and found by the finger in the rectum that it passed close to the mucous membrane of the bowel. I stated that he would require the operation for fistula, but requested him to remain quiet, and wait a week. On my next visit I found the abscess closed, and the part quite sound. Most practitioners have met with similar cases. A sinus formed in this way burrows close to the outer surface of the mucous

membrane of the rectum, which forms a thin barrier between the bowel and the sinus. This shortly ulcerates, and thus is formed the internal orifice of the fistula. But this does not invariably take place. I have, in a few instances, met with a fistulous opening near the anus in which no communication with the bowel could be found on the most careful examination. That such a fistula occasionally occurs I have no doubt, notwithstanding the opinion of so high an authority as Sir B. Brodie, who, in a valuable lecture on this subject,* states that he is satisfied that the inner opening always exists. I have observed one fistula of the kind in the dead body; and a few preparations showing the same fact may be seen in our hospital museums.† The abscess may make its way into the bowel before bursting externally, but the inner opening is commonly formed subsequently to the outer, and is small in size. When a fistula originates, as I believe it most commonly does, in the way above described, there is a sensation of weight about the anus, swelling of the integuments, considerable tenderness on pressure, pain in defecation, and constitutional disturbance, with rigors. These symptoms are relieved after the matter is discharged. The congestions to which the hæmorrhoidal veins are very liable, I have no doubt is the principal cause of the abscesses in the vicinity of the anus, inflammation

* The Lancet, 1843-4, vol. i. p. 592.

† Vide preparations numbered 35 and 46, series xvi. in the Collection at St. Bartholomew's Hospital.

and its consequences being readily produced in parts so favourably formed for such disease.

A sore formed in the little pouch, just within the external sphincter, and originating in the irritation to which this part is liable, instead of spreading superficially, sometimes perforates the bowel, and allows the escape of a little fæculent matter into the areolar tissue around it. Last winter I attended with Dr. Ashwell a young married lady, who had an affection of the rectum. On examination with the speculum, we detected an ulcer of the mucous membrane at the lower and back part of the rectum. A fortnight afterwards an abscess pointed near the anus, and ended in a complete fistula, which opened internally at the seat of the ulcer. A very similar case is related by Sir B. Brodie. Two years ago I operated for fistula on a patient of Mr. Arthur, of Shadwell, a married woman, who had suffered from the complaint more than usual. The wound healed in a fortnight; and on examining the part carefully, in consequence of her still suffering considerable pain, especially after defecation, I detected an ulcer at the back of the rectum, a short distance only from the inner opening of the fistula. Mr. Arthur attempted to cure this by different applications, but without success; and at the end of a month I divided the ulcer and sphincter muscle, after which the sore healed. In this case it appears that two separate ulcers formed in the rectum. One perforated the bowel; the other remained a painful superficial sore. Again: ulceration induced by an internal pile, and more rarely by a pointed

foreign body, as a fish-bone sticking in the mucous membrane, may produce perforation, and a rectal abscess. In all these cases the inner opening is found just within the external sphincter; indeed, in whatever way a fistula originates, this is the most usual situation for the orifice. This point was established some years ago by M. Ribes,* who examined a large number of bodies in order to ascertain the precise situation of the inner opening. In seventy-five subjects he never found the opening seated higher in the rectum than five or six lines: in a certain number it was only three or four lines up. M. Ribes' observations clearly show that the inner opening of the fistula is, in a large majority of cases, a very short distance only from the margin of the anus, and are fully confirmed by Sir B. Brodie, who, indeed, goes so far as to say—"the inner orifice is, I believe, always situated immediately above the sphincter muscle, just the part where the fæces are liable to be stopped, and where an ulcer is most likely to extend through both the tunics." This, however, I have by no means found to be so constantly the case. I have examined several patients with fistula, and inspected the parts in others after death, in which the opening into the bowel was more than an inch above the external sphincter. There are several preparations of the kind in the London Museums.

Fistula occurs in phthisical subjects, originating in

* Quarterly Journal of Foreign Medicine and Surgery, vol. ii. 1820.

ulceration of the mucous membrane, and perforation of the bowel. In these cases the inner orifice is usually large in size, and there is sometimes a second opening. It is somewhat remarkable that Andral and Louis should have found this complaint very rarely indeed in phthisis, when all surgeons in this country agree that fistula is by no means of unfrequent occurrence in patients afflicted with tubercular disease of the lungs. The abscesses originating in ulceration of the mucous membrane often form insidiously, patients suffering but little constitutional disturbance, and scarcely any local uneasiness, until the abscess is near the surface, and about to burst. In other instances the symptoms are severe: there are rigors, and considerable febrile derangement, sometimes of the low type, attending the formation of fetid abscesses.

Though the inner orifice is very commonly found just within the external sphincter, communicating with one of the little sacs situated at this part, the fistula itself often extends some distance up the side of the rectum, as much as two or three inches, or even higher; and it may burrow in different directions. Formerly, surgeons, in examining patients, not being able, on passing the probe up these sinuses, to find any opening into the rectum, used erroneously to conclude that there was no communication with the bowel,—that the fistula was a blind one: but since the anatomy of the disease has been better understood, and greater pains have been taken in the examinations, search being made in the right direction, an inner opening has generally been

detected. When sinuses pass in different directions, there is sometimes more than one inner opening. There may be one in the usual situation, and another higher up, or on both sides of the rectum, with an indirect communication between the sinuses. Sometimes there is an external orifice on each side of the anus leading to fistulous passages, which pass to the back of the rectum, and communicate with the gut at this part by a single orifice, so as to form a sort of *horse-shoe fistula*. The matter is liable to lodge in these complicated sinuses, to give rise to inflammation, and to lead to fresh abscesses and additional fistulous passages. When the disease is of old standing, the sides of the fistulous passages are often dense and callous, feeling gristly to the finger. In all cases of complete fistula the occasional escape of a little fæculent matter into the passage would be amply sufficient to prevent the part healing, even if the actions of the levator and sphincter ani, and the movements of defecation, did not also interfere.

• A fistula in ano is at all times an annoying complaint. Even when the seat of disease is free from all inflammation and tenderness, the patient is troubled with a discharge which stains the linen, and keeps the part uncomfortably moist. The discharge is usually a thin purulent fluid; at other times it is thick, and tinged brown, from admixture of fæculent matter. The discharge is more or less copious in different cases,—a circumstance depending very much on the extent of the sinuses: it also varies at different times. It occa-

sionally becomes so thin and scanty, that the patient begins to think that the fistula is about to close, when he is disappointed by fresh irritation being set up, and the complaint becoming as annoying as ever.

Fistula in ano is a disease of middle life, and occurs more frequently in men than in women. It is occasionally met with in young children, but rarely forms in advanced life, which is, probably, partly owing to the laxity of the rectum and sphincter in old people rendering the mucous membrane less liable to irritation and injury, and partly to the relief obtained by discharges from the hæmorrhoidal veins when congested.

The treatment necessary during the formation of the abscess which precedes the establishment of a fistula is rest in the recumbent posture, fomentations or the hip bath, a poultice to the part, and mild laxatives. Leeching does not prevent suppuration taking place, and weakens the patient unnecessarily. As soon as fluctuation can be felt, the prominent or central part of the abscess should be punctured freely, to prevent the matter burrowing in the loose areolar tissue, and thus to limit the extension of the sinuses. The local treatment must afterwards be continued until inflammation has subsided, and the suppurating sac has become fistulous and indolent. An examination may then be made. For this purpose I use a probe-pointed steel, or silver director, slightly curved, with the groove carried quite to the extremity, and a flat handle. The patient can be examined lying on the side, or leaning over a table opposite a good light. The director, held

lightly in the hand, being inserted at the external orifice, is to be passed along the sinus, the oiled forefinger of the left hand being introduced into the rectum: the surgeon is then to search with care for the inner opening in the usual situation just within the sphincter. The point of the instrument having slipped into the rectum, comes in contact with the finger. It is not always easy, however, to find the opening. If the surgeon fails, he must repeat the attempt a second or a third time, until he has found the aperture in the mucous membrane, or has satisfied himself that none exists, being most careful to avoid using the slightest force. This is especially necessary in examining sinuses passing up the side of the rectum; for the areolar tissue yields so readily, that without care a passage may easily be made where none existed before. The inner opening may sometimes be detected by introducing the speculum, and exposing the mucous surface in the vicinity of the fistula, and then injecting a little milk at the outer orifice. The appearance of the white fluid at a spot in the mucous membrane indicates the situation of the aperture towards which the surgeon may guide the probe.

The cure for fistula is by operation—a division of the parts intervening between inner and outer orifices, including the fibres of the external sphincter. The operation is not a severe one, and, unless the patient is a sensitive timid person, I do not employ chloroform. If chloroform be given, the patient must be placed

upon the side ; otherwise, the operation may be performed with the body bent over a table. An aperient should be given, so as to obtain relief from the bowels a few hours before the operation. The director having been carried into the rectum in the manner above described, its point in a thin person may often be made to appear at the anus. A strong curved bistoury with a cutting edge quite up to the blunt extremity is to be carried along the groove of the director, and the parts between the two openings are to be rapidly divided by an incision which gives little more than momentary pain. In stout people, especially males, and in cases where the internal orifice is somewhat higher than usual, it is necessary to introduce a speculum before performing the operation, in order to guard the opposite part of the bowel from injury. In ordinary cases, the left fore-finger will be sufficient for the purpose. After the incision, a piece of soft lint may be placed between the edges of the wound to stop the bleeding, which is usually, in the common operation for fistula, of slight extent. An opiate will keep the bowels quiet for a couple of days, and then a mild aperient will be required. A little bit of wet lint may be passed gently to the bottom of the wound after each evacuation. If the sore be slow in healing, the lint may be dipped in a slightly stimulating solution. This is the only application necessary. The wound commonly closes readily by granulation, and the functions of the sphincter are unimpaired. In old cases of fistula, the hardened

walls of the sinus offer considerable resistance to the knife. It is advisable, therefore, not to use too slender a bistoury, for fear of the blade breaking.

In those cases in which sinuses run for some distance up the side of the rectum, it was supposed, until recently, that these passages could not be obliterated without being laid open in their whole extent; and accordingly the parts were divided high up, and a severe operation performed, at the risk of serious hæmorrhage, which it was at all times difficult to arrest. In consequence of the inner opening not being sought for in the right direction, a complete fistula was often mistaken for a blind external one; and therefore, in operating, an artificial opening was made above a natural one which had escaped detection; so that not only was a larger division of parts effected than was really required, but, owing to the inner orifice below not being included in the incision, the operation not unfrequently failed. The observations of M. Ribes were consequently of great service in leading surgeons to search for the opening into the bowel near the sphincter instead of at the extremity of the fistulous sinus, and in showing that the inner orifice was present far more frequently than was commonly supposed. The improvements in the treatment of fistula which naturally sprung from these observations were early carried out, and have been strongly advocated by Mr. Syme, of Edinburgh, in his book on Diseases of the Rectum. Similar views of practice have also been enforced by Sir B. Brodie, in the Lecture already re-

ferred to. These eminent surgeons have shown that, when a fistula passes for some distance upwards along the side of the rectum, it is not necessary that it should be divided in its whole extent; and that, if the parts intervening between the inner and outer openings below be freely cut through, the sinus above will probably close, and the patient be cured by a simple and slight operation.

In cases of blind external fistula, in which the surgeon is satisfied, by a sufficient examination, that there is no internal orifice, the point of the director should be carried to that part of the fistula which is close to the mucous membrane of the rectum, and made to bear steadily against the end of the finger until the membrane is perforated, care being taken that sufficient support is given by the finger to prevent the bowel being in any degree detached from the neighbouring structures by the pressure of the director. The intervening parts can then be divided, as in complete fistula. The spot where the membrane is denuded will generally be found a short distance only above the external sphincter. We read in books of *blind internal fistula*, in which an opening into the bowel leads to a fistula without any external orifice. Such cases are very rarely met with in practice: the external opening sometimes closes for a short time, the spot being indicated by redness and induration; but sooner or later it reopens, and the discharge returns, or a fresh opening is formed at some little distance off. It may happen, however, that the original ulcerated open-

ing in the rectum being large, the matter from the abscess formed in the areolar tissue outside finds its way so readily into the bowel, that the abscess does not burrow towards the surface. This is not a common case. The situation of the suppurating cavity may be ascertained externally by a sort of hollow, or indistinct fluctuating feel. When this is the case, a bistoury plunged into the sac will render the fistula complete, and it may then be treated in the usual manner. In cases where the matter burrows in the buttock, and comes to the surface some two or three inches or more from the anus, it is not always necessary to lay this sinus open for its whole extent, which would be a severe operation. Using the probe end of the director as a guide, the surgeon may make an external artificial opening into that part of the fistula which is near the anus, and then divide the structures between this orifice and the internal one in the usual way, by which means, the communication with the outer part of the fistula being cut off, it closes without difficulty, whilst the internal wound heals by granulation from the bottom.

When the opening in the rectum is more than an inch and a half above the external sphincter, the division cannot be made without risk of hæmorrhage, which the surgeon may find great difficulty in arresting—indeed, death from bleeding has happened after the division of a rectal fistula high up. These cases are best treated by a ligature, which, if properly applied and very gradually tightened, answers very well, and

is less tedious and painful than is commonly supposed. The application of the ligature to fistula, though often practised formerly, is now seldom resorted to, the knife being found a less painful and tedious mode of curing the disease. Some years ago, my colleague at the London Hospital, Mr. Luke, devised an ingenious screw tourniquet for gradually increasing the tension of the ligature, by which an improvement is effected in this mode of treatment. A strong cord of dentist's silk having been carried through the fistula by the introduction of an eyed probe with a moveable extremity, and withdrawn at the anus by means of a spring catch passed into the rectum upon the fore-finger of the operator, is to be attached to the screw apparatus, and secured with moderate tightness, but not so as to cause pain.* The tension of the ligature is afterwards to be very gradually increased by turning the screw as it gets loose, until the cord cuts its way out. While this process of ulceration is proceeding, the gap behind becomes filled up by granulations; so that, in a day or two after the removal of the ligature, the fistula is found to be cured. Though the treatment by ligature in this way is safe and nearly free from pain, and admits of the patient moving about, the application of it gives more trouble than division of the parts by the knife; and, owing to the necessity for turning the screw at intervals, more attention is required after-

* The instruments are described and figured in the *Lancet*, vol. i. 1845, p. 222.

wards. On these grounds, incision is preferable in ordinary cases, and, I may add, is so regarded by Mr. Luke; but, in cases of fistula opening so high up in the rectum that the knife cannot be used without danger of hæmorrhage, I should certainly employ the ligature. Such cases, I know, are not common in practice, but they do occasionally occur. I witnessed the treatment by ligature of two of Mr. Luke's cases, in one of which the internal opening of the fistula was two inches above the anus, and the other as high as the point of the finger could reach; and a patient with a fistula of a similar character to the last was under my care in the hospital last year, but the state of the man's general health prevented my adopting any mode of curing the local disease.

It is difficult to describe the treatment required in the different forms of complicated fistula; so much depends on the peculiarity of each case, no two being ever exactly alike. In the *horse-shoe* fistula, a free opening into the rectum on one side will probably be sufficient, the outer opening of the sinus on the other side being dilated so as to allow a free escape of any pent-up matter. When there are two internal orifices on the same side, it is desirable, if possible, to include both of them in the incision, or, after the upper one has been divided in the usual manner, to lay the lower opening into it. If the interval between the two inner openings be great, one being situated high up, it will be as well to operate from the lower one, after which the free passage of the fæces and inactive state of the

sphincter may allow of the upper opening and sinus closing, though this cannot be at all relied on. When an inner opening exists on both sides of the rectum, with only one external orifice, the usual operation may be performed at the side on which the outer opening is situated, taking the chance of the other internal aperture closing spontaneously. Should this not take place, a second operation can afterwards be done on the other side. In these complicated cases the condition of the patient's health often precludes the performance of any operation. In phthisical patients no judicious surgeon ever ventures to use the knife. A fistula connected with a carious state of the ischium or sacrum is also unfit for operation. Sinuses in the perineum are sometimes found to open into the rectum as well as into the urethra, and the communication allows the escape of gas, and sometimes of thin feculent matter, into the urinary passage, to the great annoyance and distress of the patient. These sinuses originate in inflammation and abscess of the prostate gland, and do not belong exactly to the diseases of the rectum. To obtain a cure, the fistulous passages require to be freely laid open into the bowel, and the wound must afterwards be dressed from the bottom with lint.

Last year I was consulted by a young married woman who had not only a fistula which opened by the side of the rectum, but another which communicated with the vagina, and a third that opened at the lower part of the labium. So much feculent matter

passed into the vagina that it was evident the communication between it and the rectum was pretty free. Though in a miserable condition, she would not consent to undergo an operation, and I lost sight of the case. In a case of this kind, if both the sphincter ani and the sphincter vaginæ are divided, it is found that the patient loses the power of retaining her fæces. Sir B. Brodie states that a lady consulted him with a fistula communicating with the rectum in front, and opening externally just at the beginning of the vagina. He merely made a free division of the sphincter ani on both sides, so as to set it completely at liberty. The discharge from the fistula gradually diminished, and, some five months after the operation, the fistula appeared soundly healed. I intended to have adopted a somewhat similar plan in the case above alluded to, but the large size of the opening into the vagina would, I expect, have rendered some further proceeding necessary.

Mr. Copland has the credit of having first practised the division of the external sphincter for the cure of fistulous communications between the rectum and vagina. The proceeding is applicable to another class of cases, to which I may here briefly allude. The extremity of the septum between the vagina and rectum occasionally becomes lacerated in labour, the patient being afterwards unable to retain her fæces. The cure of this distressing infirmity may be effected by paring the edges of the gap, and, after division of the external sphincter on each side, bringing them

together with sutures, which should be tied in the vagina. An opiate afterwards will keep the bowels at rest for two or three days, and the sutures may be taken out on the third day. The operation does not always succeed, but the double division of the sphincter much lessens the chances of failure.

CHAPTER VIII.

CHRONIC ULCERATION OF THE RECTUM.

MY inquiries into the morbid anatomy of the rectum have led me to remark the frequency of ulceration of its mucous lining, not only in cases of dysentery, and as a consequence of the ordinary diseases of the part, such as stricture and cancer, but as a separate affection. In several specimens which I have examined, ulceration was diffused over a considerable extent of surface. I have observed the whole of the lower part of the rectum stripped of its mucous membrane for a distance of two or three inches. This extensive disease is sometimes, indeed generally, attended with thickening and consolidation of the subjacent tissues, without diminution in the calibre of the bowel. The muscular coat is in some instances hypertrophied. In one case, the mucous coat for a short distance within the sphincter was so riddled with holes as to form, as it is described in the post-mortem book, "a perfect cribriform tissue," the submucous tissues being at the same time much thickened. I have seen the mucous membrane ulcerated in patches, the sound portions being in some places detached from the muscular fibres beneath, so as to form bridges more or less broad, or merely some

narrow bands or bridles. There were frequently abscesses and fistulous passages in the thickened tissues around the diseased rectum. In two instances ulceration had produced a perforated opening communicating with the peritoneum, death having been caused by the escape of some feculent matter into the abdomen, and inflammation of the serous membrane. In other cases the peritoneum was involved in the consolidation, and inflamed without being perforated, the omentum in one case being adherent to the anterior part of the rectum.

The history of these cases of ulceration was not sufficiently clear to enable me to trace the origin of the disease satisfactorily. They were all of a chronic character, the morbid parts having been taken from subjects who had suffered for a long period from a complaint of the lower bowel. In some of the cases it seemed probable, from what could be gathered of the history, that there had been chronic inflammation of the coats of the rectum, and ulceration, which had been aggravated, if not produced, by the improper and rough use of bougies for some slight or supposed contraction of the passage. I have a woman, aged seventy-nine, under my care at the present time, who has unequivocal symptoms of ulceration high up in the rectum. She has suffered from disease of this part for more than fifteen years, and about eight years ago was treated for stricture by a hospital surgeon, who occasionally passed bougies for upwards of two years: yet, upon a recent examination, I could detect no contrac-

tion in the bowel, but the mucous surface high up felt rough and irregular. That important diseases of the rectum may be induced by the introduction of instruments, as bougies and clyster-pipes, I have found ample proof; and my experience of the mischief which has been caused by them leads me not only to enjoin the necessity for care and gentleness in so familiar an operation as the passage of a pipe for the administration of injections, but also to deprecate the practice of permitting patients to introduce bougies for themselves, which I know is often sanctioned by the medical adviser, and, I fear, is sometimes recommended in cases where there is little necessity for their employment. In treating of stricture, I shall adduce examples of the serious injuries which patients have been known to inflict upon themselves in this way. There can be no doubt that, in a rectum rendered irritable by drastic purgatives, or acrid secretions and evacuations, abrasion of the mucous surface by a clyster-pipe or indurated fæces would be sufficient to excite ulceration and generate chronic inflammation. Writers on the Continent have noticed ulcers of the rectum of a syphilitic character, resulting from direct inoculation. No case of the kind has fallen under my observation, and I trust that it is a form of the primary disease very rarely met with in this country. A few years ago, Mr. Avery exhibited at the Pathological Society a specimen of ulceration of the rectum, the history of which clearly showed the connection of the lesion with syphilis, and its probable occurrence as one of the secondary pheno-

mena of the disease. Immediately within the anus, which was surrounded by a circle of vegetations, the ulcer commenced, extending three inches upwards and occupying the whole of the internal surface of the rectum to that extent. The edges were rough and uneven above, and below soft and rounded; the whole surface was smooth, exhibiting the muscular fibres of the intestine quite bare. The patient, a young woman, aged twenty-two, died in the Charing Cross Hospital from erysipelas of the face, and had been troubled with a discharge from the rectum for about seven months previously. She had been in the hospital a year and a half before with an extensive sloughing ulcer in the fourchette. When she died, she had numerous indelible marks of syphilitic eruption on the limbs and trunk, and was suffering from sore-throat.* The case is one of considerable practical interest. By far the greater number of specimens of chronic ulceration which have fallen under my observation were from the bodies of females.

The chief symptoms which may be considered as referable to chronic ulceration of the rectum are—a purulent discharge from the anus, more or less copious; motions generally loose, and mixed or coated with a slimy fluid, and streaked with blood; soreness in passing stools, and occasionally tenesmus. The pain, however, in defecation varies considerably, being in some cases severe, and in others very trifling.

* Transactions of the Pathological Society, vol. i. p. 94.

Indeed, it is surprising, how little suffering is often caused by the actions of the rectum and passage of the fæces, in cases of large ulceration of the mucous surface. The old lady, to whose case I have briefly alluded, has very little uneasiness in passing her stools; and Mr. Avery's patient, though affected with extensive disease, suffered very little pain, but she was troubled with a copious discharge. The surgeon, on examination with the finger, will be able to distinguish a rough uneven surface, and frequently hardness and consolidation of the walls of the rectum. The ulcerated surface, if in the lower part of the bowel, could be readily recognised on examination with the speculum.

The treatment suitable to this disease is the application of mild stimulating ointments, or of a weak solution of the nitrate of silver to the ulcerated surfaces; anodyne ointments, or anodyne injections with mucilage in painful cases; due regulation of the bowels; and such constitutional remedies as the general symptoms may seem to demand. I shall not dwell, however, on the treatment of cases, in the management of which, in the early stage when they might be expected to yield to remedies, I have had little experience. My chief object, in this chapter, has been to invite attention to a class of cases, which appear to me to have been in some degree overlooked in practice, or to have been mistaken during life for a different disease, in the hope that further inquiry may help to elucidate their pathology.

CHAPTER IX.

STRICTURE OF THE RECTUM.

THE rectum, like other mucous canals,—as the œsophagus and urethra,—is liable to obstruction from a contraction of its walls, forming the disease called *stricture*. In some cases, the contraction is very limited in extent, and the stricture is then termed *annular*; in others, it includes a portion, more or less considerable, of the coats of the bowel. On anatomical examination, the mucous membrane involved in the contraction is found tumid, thickened, and usually in some degree congested. This membrane is closely adherent; and, when carefully dissected off, the submucous areolar tissue is observed to be condensed—to consist of close-set fibrous tissue, sometimes for a limited extent, as in annular stricture, where it surrounds the gut, and lengthwise gradually blends with the healthy areolar tissue above and below, but more frequently forming a callous indurated mass from half an inch to two or more in length. This thickening is occasionally confined to part only of the circumference of the rectum, or is greater on one side than on the other, contracting the canal irregularly, and forming a winding passage: or the induration, instead of being

limited to a small portion of the bowel, may involve the greater part or the whole of the gut. In several specimens of the disease which I have examined, the calibre of the rectum was thus diminished in various degrees. In the Museum of King's College there is a preparation showing great thickening and consolidation of the entire walls of the rectum, with hypertrophy of the muscular coat, and considerable narrowing of the passage. Writers have described a form of stricture of the rectum produced by bands stretching across the canal. No instance of the kind has fallen under my observation ; and I suspect that the bands were merely broad folds of the mucous membrane, which were supposed to intercept the passage.

Above the stricture the rectum is commonly dilated and thickened. The enlargement results, not from a yielding of the coats, but a general hypertrophy of the intestine, and particularly of the muscular coat, the fibres of which are remarkably large and distinct. The mucous membrane at this part, in some instances, is found healthy ; in others, red and congested, and in many cases ulcerated. There may be ulcerated apertures leading to fistulous passages which extend for some distance, and open externally near the anus, or as far off as the buttock. In the body of a woman who had a close stricture in the rectum an inch from the anus, in addition to a large ulcer in the bowel above the contraction, I found a fistula communicating with the vagina. There may be but little alteration in the bowel below the stricture, but it is generally in

some way diseased. There is frequently diffuse ulceration of the mucous membrane, and sometimes hæmorrhoids, or a complete fistula in the usual situation near the anus. Sinuses may exist burrowing in different directions amongst the thickened tissues around the lower part of the bowel.

The changes above described originate in chronic inflammation of the mucous and submucous areolar tissue of the rectum, either limited in extent, or affecting the greater part of the intestine. It is seldom possible to fix on the exciting cause in a particular case ; but the part is exposed to so many sources of irritation, from unhealthy and acrid secretions, the lodgment and passage of hardened fæces, injuries from foreign bodies, as fish-bones, &c., the disturbance produced by undue muscular action in tenesmus and forcible defecation, that the occurrence of a slow inflammation of the coats, ending in contraction, cannot be viewed with surprise. Women, in whom the disease is more common than in men, have sometimes ascribed its origin to a difficult labour, by which, there can be no doubt, injury may be inflicted on the bowel, so as to lay the foundation for chronic disease.

Although strictures of the rectum are generally produced, as I have described, by chronic inflammation chiefly of the submucous areolar tissue, without any breach in the mucous surface, they also originate in another way—viz., in the contraction consequent upon the healing of ulcers or wounds in the bowel ; and I believe that this takes place more frequently than is gene-

rally supposed. That ulceration of the rectum is a common disease, I have shown in the preceding chapter, and it is clear, that sores of any extent would be sure to produce some amount of contraction in the process of healing. In cases of stricture, so much disorganisation of the rectum takes place before death, that we are rarely able to determine, by careful examination afterwards, the primary cause of the contraction. This disease, however, has been distinctly traced to arise after an attack of dysentery, in which there was reason to conclude that the rectum had suffered; and two cases, in which chronic ulcer in the rectum had been followed by contraction to such a degree as to prove fatal, have been recorded by Cruveilhier.* It seems obvious, that cicatrisation and contraction would be more likely to arise, in cases of ulceration where the remaining coats of the bowel and parts around were healthy and yielding, than where there was much thickening and condensation of the subjacent tissues; and perhaps, this may partly account for the circumstance that, in such extensive disease as I have described in the foregoing chapter, there was so little attempt at repair, and scarcely any diminution in the calibre of the intestinal canal. Injuries of the rectum causing a breach in the mucous surface have in several instances produced contraction of the rectum. I lately examined a preparation of much interest in the Museum of St. Bartholomew's Hospital, taken

* Anatomie Pathologique, livraison xxv.

from a child five years old. Ten months before death, in the endeavour to administer an enema, a clyster-pipe was forced through the adjacent walls of the rectum and vagina. At the part thus injured there is a small depression in the wall of the vagina, and a long, pale, and irregular cicatrix in that of the rectum. Near this cicatrix, also, there are traces of small healed ulcers of the mucous membrane of the rectum. Just below the cicatrix, at a distance of about an inch from the anus, the canal of the rectum is reduced to an eighth of an inch in diameter, and the adjacent tissues are indurated. Above this stricture the intestine is greatly dilated.

Some difference of opinion exists respecting the seat of a stricture in the rectum. It varies, but is usually at the lower part of the gut, about two or three inches from the anus, and easily within reach of the finger. The point at which the sigmoid flexure terminates in the rectum, which naturally presents a slight contraction, is not unfrequently the seat of stricture. If this part be loosely attached, the weight of the fæces accumulating above the stricture, and the violent straining of the patient, may force the contracted part low enough to be reached with the point of the finger introduced at the anus, the descent taking place in the form of a slight inversion of the bowel. A man with a stricture at this point was under my care in the London Hospital in 1850. The case was remarkable from the extraordinary dilatation which the bowel below the stricture had undergone. The finger seemed to pass

into a capacious sac, at the fundus of which the contracted aperture of the intestine could be felt projecting.

The interior of the rectum is sometimes abundantly studded with small excrescences arising from partial hypertrophies, or irregular growths of the surface and folds of the mucous membrane. The sensation communicated to the finger passed into the rectum is remarkable, the surgeon feeling a number of rough, irregular eminences, more or less hard, thickly covering the surface. I believe this condition of the rectum to be rare. My observation of it is limited, nor have I met with it in any case except in conjunction with stricture; but I have no doubt it may occur independently. In the best marked case that has occurred to me the patient was a female, and the stricture was situated about three inches from the anus, and attended with an unusually profuse discharge. Sir B. Brodie, who has particularly noticed this affection in his Lectures on Diseases of the Rectum, published in the sixteenth volume of the Medical Gazette, states that he has observed it chiefly in women, especially in those who have borne children; and he considers that it ought to be distinguished from ordinary stricture of the gut. He mentions that there are generally at the same time some small flattened excrescences to be observed at the margin of the anus, something like shrunk or collapsed external piles, but smaller. I am disposed to regard this state of the rectum as the result of chronic inflammation of the mucous surface, giving rise to a

profuse secretion of a muco-purulent fluid at the lower part of the gut, and as somewhat analogous to chronic cystitis. This disease leads to the production of excrescences and hypertrophies of the mucous membrane, and higher up to the formation of stricture, the latter not being necessarily associated with the former. I believe that the tubercles from the mucous membrane, scirrhusities, and internal condylomata of the rectum, described by some of the French writers, as Desault and Delpech, are nothing more than these excrescences. Desault supposed that they were of syphilitic origin; but his observations in reference to that point are not satisfactory.

Stricture of the rectum is a disease of middle life. It very seldom occurs in children, unless, as in the case related at page 86, where it was the consequence of injury. A few years ago, a girl, aged eleven, died in the London Hospital from stricture and ulceration of the rectum, the history of which I have not been able to trace. This is the earliest age at which I have met with the disease. It is rare, also, in old people. Most of the cases that have fallen under my notice have been between the ages of twenty and forty, and three-fourths were women.

The earliest symptom of stricture is, generally, habitual constipation, with difficult defecation when the motions are solid. The difficulty being readily relieved by a solvent purgative, the nature of the case is not usually suspected at this early period. As the contraction increases, the constipation is with difficulty overcome,

and the patient acquires the habit of straining to relieve the rectum. The stools are observed to be small in calibre, and are often voided in small lumps.* The mucous surface, irritated by the disturbance in the functions of the rectum, becomes inflamed and excoriated. This renders the actions of the bowels painful, a burning sensation lasting frequently for an hour or more after a stool. There is also a secretion of brown slimy mucus, which escapes with the motions, and soils the linen. The gases evolved in the intestines not escaping readily, give rise to flatulent distension of the abdomen, and disagreeable efforts for relief. The bowels often remain constipated for days together, and then a strong cathartic softens the motions, and enables the patient to void the accumulated mass, its passage being attended with pain. In other instances, the patient is teased with frequent evacuations, fluid, and small in quantity. As the disease makes progress, the mucous membrane ulcerates; the discharge becomes purulent and bloody, and the sufferings are much increased, the passage of motions being sometimes likened by the patient to a

* I give no account of the small, or flat tape-like, or figured fæces described by writers as characteristic of stricture, as I do not ascribe much importance to these appearances. When the bowels are irritable, and act frequently, persons with a healthy rectum will pass small and figured fæces; and an irritable sphincter likewise influences the size and shape of the motions. Besides, there is no necessity to pay much attention to an uncertain symptom, when an examination with the finger can so readily determine the real condition of the part.

feeling as if boiling water were passing through the rectum. There is sometimes so copious a discharge as to mislead the practitioner, the stricture being overlooked, and the case treated as one of protracted diarrhœa. The ulceration often leads to abscess and fistula, feculent matter being forced, or finding its way through the ulcer into the areolar tissue around, and exciting inflammation and suppuration. Fistula in ano is, indeed, a common complication of strictured rectum, especially in long standing-cases.

The appetite often remains good, and even the general health but little impaired, for a long time. The disease is very chronic in its progress; and so long as a passage for the motions can be obtained, though with difficulty, the patient continues following his avocations, suffering more or less at different periods. Indeed, it is surprising how great a length of time the general health will sometimes continue without being materially affected, even in cases of close contraction of the gut. The derangement of the digestive functions, and irritation kept up by the disease, in the course of time, however, undermine the constitution, and bring on hectic symptoms. Other disorders are induced, and the stricture directly or indirectly becomes the cause of death. This is sometimes hastened by a lodgment of hardened fœces, or of some foreign body, just above the stricture, so as to block up the passage, and occasion all the ordinary symptoms of internal obstruction, with the death of the patient after many days' constipation. I know of several instances in which an occurrence of this

kind first led to the detection of the complaint. In a patient whose motions are habitually soft, the stricture may make considerable progress without suspicion being excited of the existence of any important disease. He may continue for months subject to occasional constipation and derangement of the bowels, and passing fæces of small size, but experiencing no further inconvenience until a sudden stoppage, and an examination of the rectum, reveal the presence of a serious stricture. The following case shows how slight may be the discomfort produced by a considerable contraction in the passage for the fæces:—A gentleman, of middle age, called on me one day in the autumn complaining of inability to pass his stool, and of great pain from some obstruction at the anus. On examination I found a hard, rigidly contracted anus, scarcely capable of admitting the point of the little finger, and a solid body impacted in the opening. Grasping this with a pair of forceps, and using some force, I extracted a plum-stone. On inquiry, I learnt that my patient had been operated on about two years before by a surgeon at the west end of town for some kind of growth at the anus, since which the orifice had remained contracted. His evacuations had been small in calibre, but he had experienced no difficulty in passing them, and previous to the obstruction described had not been troubled in any way. The suffering in stricture much depends upon the condition of the mucous membrane. When it becomes excoriated and ulcerated early, there is gene-

rally more distress in the after progress of the disease, and greater difficulty in conducting the treatment.

In examining for stricture, it must be recollected that the rectum is liable to be compressed and obstructed by disease of the neighbouring viscera,—by an enlarged or retroverted uterus, fibrous tumors of this organ, a distended ovary, an excessively hypertrophied prostate, or an hydatid tumor between the bladder and rectum. There is a preparation, in the museum of the London Hospital, of considerable contraction of the rectum produced by a large fibrous and fatty tumor, of an oval shape, developed outside the intestine. Several cases are recorded in which bougies have been long used for the cure of a supposed stricture in the rectum, when the obstruction has afterwards been found to arise from the pressure of tumors external to the coats of the bowel.

The main object in the treatment of a stricture in the rectum is to remove the chronic induration, and to dilate the contracted part sufficiently for the free passage of the motions. The surgeon is rarely consulted at a period when it would be right to adopt even mild anti-phlogistic treatment. Yet my experience of the great advantage often derived from the local abstraction of blood, previous to the use of instruments, in stricture of the urethra, leads me to think, that a few applications of leeches to the mucous membrane of the rectum, near the seat of contraction, would prove of considerable service, in the early stage of the disease, in removing the chronic thickening, and facilitating the subsequent

treatment. Leeches may be readily applied to this part by the aid of a glass speculum, with a side opening at its extremity. The dilatation of the stricture is to be effected by mechanical means,—by the passage of bougies. Rectum bougies are made of a slightly conical shape, and of various materials. Those formed of a composition of wax, elastic gum webbing, or caoutchouc, are the most useful in practice. Wax bougies, being soft, are adapted for very sensitive strictures; but as they can seldom be used more than once, and have little effect on a firm stricture, they are not found so convenient as the elastic gum and caoutchouc. The former, being smooth, glides readily through the opening, and offers considerable resistance to a firm stricture; the latter, being of a softer material, answers well in strictures which yield readily to dilatation. If caoutchouc bougies be used, they must be lubricated with soap and water, as oil and grease are injurious to them. The bougie may be passed with the patient kneeling; but the more convenient position is the recumbent, on the left side, with the limbs bent on the body. The character and closeness of the stricture being ascertained by a careful tactile examination, a bougie, of size sufficient to pass without force, and without giving pain, should be selected. This being well lubricated, should be passed gently, but fairly, through the stricture. If the attempt be difficult, or give pain, a smaller size should be taken. The bougie should then be retained for about half an hour, or much longer if the stricture be very firm and unyielding. The operation may be

repeated, as soon as the irritation produced by the instrument has quite passed off, about every third or fourth day, and the size of the bougie may be increased according to the effect produced by the dilating process. This should always be gradual, for forcible dilatation is very liable to excite inflammation in the coats of the rectum, and to aggravate the disease. Inflammation thus produced has been known even to extend to the peritoneum. The treatment by dilatation must be continued, not only until a bougie of full size can be passed with ease, and the motions are evacuated of proper size, but, even for some weeks or months afterwards, the instrument should be occasionally introduced to counteract any disposition in the contraction to return, and to ensure, if possible, a permanent restoration of the canal.

The effect of a bougie introduced through a stricture of the rectum, as in stricture of other mucous canals, is at first to stretch, but afterwards to cause a gradual absorption and removal of the indurated tissue producing the contraction—the condensed areolar or fibrous submucous tissue. The operation of pressure thus applied is constantly witnessed in the treatment of strictures in the urethra. Formerly, when my experience was obtained principally from public practice, the frequent and early return of strictures which had, apparently, been successfully treated, led me to join in opinion with those who doubted whether a firm, well-established stricture in the urethra is ever permanently cured by dilatation. More extended experience, and a

longer observation of cases, have convinced me, that if the dilating treatment be sufficiently prolonged, the areolar tissue may regain its elasticity, and be restored to its healthy state, without retaining the disposition to contract and to indurate. The influence of pressure in getting rid of a fibrous condition of the areolar tissue has been shown in a remarkable manner in several cases of contraction from burn, which have lately been under treatment in the Orthopædic Hospital, for an examination of which I am indebted to the kindness of Mr. Tamplin. Moderate pressure, long continued, has converted dense subcutaneous fibrous tissue and bands into a pliant texture, which has admitted the extension of some considerable contractions. The success of the treatment in these cases, showing how great an alteration may be effected in a dense fibrous tissue by persistent pressure, leaves no doubt in my mind, that a change equally effective may be obtained by long-continued dilatation, even in close and indurated strictures of the rectum, provided the mucous membrane is sufficiently sound to admit of the treatment being long persevered in. Unfortunately, this is frequently otherwise; and it is owing to this circumstance, rather than to the degree of induration, that dilatation so often proves unsatisfactory in practice.

A common caution given by writers on this affection is, to avoid mistaking a fold in the mucous membrane of the bowel, or the prominency of the sacrum, for an impediment in the passage, as it appears that they have, in many instances, been taken and treated

for stricture of the rectum. I need not repeat this caution, because I consider it a safe rule never to attempt the mechanical dilatation of a stricture unless the contraction be within reach of the finger. I have stated that the ordinary seat of stricture is between two and three inches from the anus, and that when situated as high up as the point at which the rectum begins, the strictured part is sometimes forced down low enough to admit of being felt by the surgeon. But in these cases the passage of a bougie through a contracted opening is by no means an easy matter; for the part being loose, the point of the instrument is very liable to catch in a fold of the mucous membrane, and to push the bowel before it, beyond the reach of the finger, without penetrating the stricture. In the case alluded to at page 86, this difficulty occurred, so that I could make no progress at all with bougies: I had recourse, therefore, to a two-bladed instrument contrived by Weiss, a modification of his dilator, and similar to what has sometimes been used in the dilatation of a phymosis. This being small, could be carried along my finger up to the stricture, and passed through it, and then, by turning a screw, and separating the blades, I managed to dilate the contraction. The patient derived temporary relief from this proceeding, being able to pass his motions afterwards with greater freedom: but the case was a very bad one, and so much difficulty was found in continuing the treatment, that it was discontinued, and the man left the hospital without being permanently benefited. I describe the plan, because it may be found

useful in other cases of stricture in a similar situation, but not so far advanced.

In cases of stricture at the junction of the colon with the rectum, without any descent or prolapsus, the seat of contraction may be indicated by the limited distance to which a flexible tube can be passed, and its reflexion on reaching that point. Still, when a stricture is out of the reach of the finger, there is no way of ascertaining its character, no guide for the selection of a properly-sized bougie, or for using it so as to dilate the contraction; no means, too, of determining positively whether the disease is simple stricture, or that form of disease—the carcinomatous—which is not likely to be benefited by mechanical interference, and in which the use of instruments is attended with risk of perforation. Such an accident has happened, indeed, without any disease at all, an instrument having been forced through the healthy coats of the intestine in the attempt to penetrate a supposed stricture. In the museum of Guy's Hospital, there is a preparation of a colon in a perfectly sound state, perforated by a bougie at the distance of fourteen inches from the anus. It was taken from a gentleman who had long suffered from derangement of the digestive organs. This being at length attributed to stricture of the lower bowel, was treated by the passage of a bougie, which had been forced through the intestine into the peritoneum, and had destroyed the patient. The colon has even been perforated with O'Beirne's tube. A prudent surgeon, therefore, would always be very careful in the introduction of instru-

ments any distance along the gut, and especially cautious not to employ force to pass what he supposes may be a stricture. It should be borne in mind, that the intestine, unless diseased, is not a very sensitive part, and will bear a good deal of pressure and rough usage without the production of pain. This will account for the injury which patients have been known to inflict on themselves in the passage of instruments into the rectum. Some years ago, a man, aged thirty-nine, was admitted into the London Hospital on account of a close stricture of the rectum. A bougie was passed two or three times, and, for convenience, left in charge of the patient. Being very anxious to make progress, he rashly ventured to pass the instrument himself. Shortly afterwards, he was seized with symptoms of peritonitis, and died the following day. On examination of the body, I found the usual appearances of active peritonitis, and about an inch and a half from the anus, a firm, indurated stricture of the rectum, an inch in length. Just above the stricture there was a perforation in the bowel half an inch in extent; and two inches above this, another rent, somewhat larger, through which a portion of intestine was protruding. It is scarcely necessary to repeat the caution already given, not to entrust a patient to pass a bougie for himself, however slight the contraction may be.

When the stricture is very close, with much induration of the submucous tissue, dilatation may be facilitated by previous incision of the thickened part. The incision is usually directed to be made in the back of

the rectum, towards the sacrum. Some surgeons recommend this to be done with the bistouri caché; but I prefer using a straight, probe-pointed bistoury, introduced flat upon the finger, and carried with it through the stricture. The blade can then be turned towards the contraction. More advantage is gained by two or three notches in different parts of the contracted ring, than from a single deeper division of the stricture. To stop bleeding, and to keep the wounded structures apart, a plug of lint or sponge should be passed into the strictured part immediately after the operation, and retained there for a few hours; and gentle dilatation should be attempted on the next or following day. I have never met with hæmorrhage to any extent after the operation. It is very rarely that a vessel of any size runs directly beneath the mucous membrane in indurated stricture. Mr. Mayo, however, divided a stricture seated within three inches of the anus, towards the sacrum. The operation was followed in a few hours with very serious hæmorrhage, which was arrested by the introduction of a pledget of lint saturated with a strong styptic solution. A deep incision is not only liable to cause bleeding, which it may be difficult to stop, but also to lead to the formation of abscess and fistula, by allowing the passage of fæculent matter into the areolar tissue about the rectum. Such an occurrence has happened several times after the operation, and, of course, has added to the difficulties of the case and distress of the patients. A case of stricture came under my observation about ten years ago, where a sur-

geon was induced to make an incision into it at the back part. The patient, a female, died about a week afterwards; and on examination I found a long sinus, containing a thin feculent fluid, extending from the wound upwards, on the right side, to the extent of six inches, and terminating under the peritoneum of the broad ligament of the uterus. There were marks of recent peritonitis in the pelvic cavity. On the whole, I am averse to having recourse to incisions. Though they facilitate the dilatation a good deal at first, the permanent gain is not considerable, and the operation is attended with risks.

In addition to these measures for dilatation of the stricture, means must be adopted to relieve the irritability of the part, and to ensure the regular passage of soft evacuations. A suppository of ten grains of soap and opium may be given at bed-time, and, if the motions are costive, some confection of senna with sulphur or castor-oil, in the morning, in doses just sufficient to obtain an action of the bowels without purging, which invariably adds to the patient's distress. Castor-oil is of great service in the treatment of this disease. In small doses it softens the feculent masses, and lubricates the passage, without weakening the patient. The chief objection to its use with many persons is the nausea to which it gives rise. But if the patient perseveres, the stomach gets accustomed to the remedy, which it tolerates as it does the cod-liver oil, so that we find patients with chronic disease of the rectum, continuing to swallow it daily for weeks and months with-

out any feeling of nausea, or impairment of the appetite. The diet should be nutritious, and consist principally of animal food, so as to afford a small amount of excrementitious matter; and it is no needless caution to advise patients to be careful to avoid swallowing plum-stones. A good deal of benefit may be obtained from the balsam of copaiba, in doses of twenty minims, taken in conjunction with fifteen minims of the *liquor potassæ* in a palatable mixture three times a day. This medicine allays the irritability of the mucous surface, and often proves sufficient to keep up a gentle action of the bowels. The accumulation in the distended bowel above the stricture may be prevented by the occasional passage of an elastic tube through the contraction, and the injection of half a pint of tepid water, or soap and water. It may be necessary to repeat the injection two or three times a week. When much pain has been experienced after stools, and the discharge is considerable and slimy, or tinged with blood, I have found the patient derive a good deal of relief from the application of a solution of nitrate of silver, in the proportion of five grains to the ounce of distilled water, to the diseased mucous surface included in the stricture. This can easily be made by means of a camel's hair brush passed through a small glass speculum open at the extremity, and introduced as far as the stricture. In a very bad case of strictured rectum, under my care in the hospital last summer, in which the consolidation was too great, and the mucous membrane too much diseased to admit of my attempting dilatation, the mo-

tions passed with much less suffering after a few applications of the nitrate of silver solution in this way. This treatment is also serviceable in that irregular hypertrophied condition of the mucous membrane of the intestine below the contraction, attended with a profuse discharge, which I have described as sometimes existing in cases of stricture. In these cases, the strength of the solution may be increased to ten grains with advantage. The application of the mild citrine ointment to the mucous surface, by means of a thick camel's hair brush passed through a speculum, has also a good effect in correcting this morbid state of the membrane. Smearing the bougie with ointments, as commonly recommended, is not of much service, as the ointment gets rubbed off in the first passage of the instrument, and does not reach the part affected. When stricture of the rectum is complicated with fistula in ano, no operation should be performed for the latter disease until the contraction in the rectum is removed.

We often meet, especially in hospital practice, with old, inveterate, and neglected strictures, in which the disease is too far advanced to offer any prospect of being benefited by dilatation. In such cases, much may be done to mitigate the sufferings of this distressing complaint by the measures just described. This is all we can hope to effect; and in spite of all our care and palliative remedies, the disease will continue to make progress, wearing out the patient's strength, and ultimately proving fatal.

I have alluded to the circumstance, that in many cases

of stricture of the rectum, the inconvenience is so slight, that no suspicion is excited, even of its existence, until the bowel becomes obstructed by the impaction, at the contracted part, of hardened fæces, or some solid body, as a plum-stone. When the stricture is near the anus, the surgeon will be able to extract or dislodge any substance so blocking up the orifice, or, in case of extreme contraction, to afford relief by dilatation or incision, and injections through a flexible tube. But if the impediment should exist, as it more frequently does, at the termination of the sigmoid flexure, and out of reach of the finger, he will probably fail in his attempts to remove it, and the patient's life then becomes exposed to imminent danger from insuperable constipation. In these cases, the constitution not being impaired by disease, a long period elapses before the vital powers give away under the disturbance, patients having lived three weeks, and even longer, without passing stools. In this interval, the propriety of having recourse to an operation to provide an artificial vent for the fæces must necessarily come under the consideration of the surgeon. The first point to be cleared up is, all doubt in respect to the seat of obstruction. It may be found, that only a small quantity of fluid can be thrown into the bowel, and that it readily returns uncoloured; that the long flexible tube will not pass further than about eight inches; or, that if its progress be not arrested at that distance, the finger introduced into the rectum, by the side of it, will meet the end of the tube, which, on reaching the obstruction, has turned back. The dis-

tended colon may be traced down into the left iliac region. These signs, especially if accompanied with pain referred to, or felt on pressure at the upper part of the sacrum, towards the left side, would pretty clearly indicate the exact situation of the obstruction. And, as an impediment very seldom occurs at the point of termination of the colon in the rectum from any other cause than stricture,* the surgeon becomes apprised of the nature of the case with which he has to deal. His opinion will be strengthened, if he finds, upon inquiry, that the illness has been preceded by slight attacks of constipation, and difficulty in regulating the bowels. It is right to add, that notwithstanding these guides, the diagnosis may be difficult; and in one case of stricture at the termination of the colon in the rectum, which came under my notice, some of the surgeons consulted, hesitated pronouncing a positive opinion as to its seat.

The knowledge of the cause of the obstruction, and of its seat in the lower part of the alimentary canal, places these cases in a different category from those of internal obstruction, in which, with the utmost skill and care, and under the most favourable circumstances, the diagnosis of the situation and nature of the impediment must always be involved in considerable obscurity. Besides, there is not the same occasion for delay in the hope or chance of the impediment yielding, which tends

* Intus-susception occurs at this part; but in such a case the invaginated intestine would be felt in the rectum. Accumulations of hardened *faeces* above the same point would be dislodged by introducing the long tube, and throwing up injections.

so much to embarrass the practitioner in treating the more doubtful cases ; for, when the ordinary means of giving relief have failed, it is clearly the duty of the surgeon to suggest the expediency of the operation for an artificial anus before inflammation is set up, or the intestines have become damaged by over-distension, or before the powers of life are too far exhausted to admit of the patient's recovery afterwards. That delay tends greatly to diminish the chances of a favourable result from such an operation is obvious enough. In a case which was operated on at the London Hospital on the fifteenth day of obstruction, and ended fatally, I found, on examination of the body, the peritoneal coat of the transverse colon ruptured to the extent of about six inches.*

An operation for artificial anus may also be required in cases of old-standing stricture lower down in the rectum, in consequence of the contraction becoming so close as, in spite of surgical treatment, to prevent the passage of fæces, and to occlude the canal. A contraction near the anus very rarely, however, produces complete obliteration of the gut ; for not only does the increasing contraction admit of being checked in most instances by proper management, but the ulceration of the mucous membrane, which so commonly ensues, slightly enlarges the passage, and counteracts the ten-

* This case is recorded in Mr. Phillips's valuable paper on Intestinal Obstructions, in the Medico-Chirurgical Transactions, vol. xxxi. Mr. Luke, who operated, saw the case only the day before.

dency to close. An opening into the intestine above the stricture may, however, be called for, in consequence of the extreme misery produced by a stricture in this situation, in addition to the difficulty experienced in evacuating the bowels. In a peculiarly distressing case recorded by Mr. Pennell in the thirty-third volume of the *Medico-Chirurgical Transactions*, a communication having formed between the rectum and bladder, and urethra, in which there was an impassable stricture, so much irritation and mischief resulted, that the patient gladly submitted to an operation for his relief.

In obstructions of the rectum, an artificial opening for the passage of the *fæces* may be made into the colon in the left groin by the operation commonly called *Littré's*; or in the left lumbar region, by the operation known as *Callisen's*, modified by *Amussat*. A careful consideration of the advantages and disadvantages of these two operations leads me to give the preference to the former. I do not ground this conclusion upon the statistics furnished by the tables of *Amussat* and *Vidal*, because I do not attach much value to them. The cases of *Littré's* operation are not only limited in number, but, in several of them, the colon was not opened in the left groin, the division of the peritoneum being the only circumstance in common. Nor do the tables afford information of the period of constipation, or of the extent to which the viscera were disturbed in the operation. *Callisen's* operation is not only difficult of execution, but the wound is necessarily of large size, especially in stout people. But, it is not so much for

these reasons that I am indisposed to adopt it, as in consequence of the operation leaving the patient exposed, afterwards, to risks and annoyances, which are in a great measure avoided when the colon is opened in the groin. Thus, I find in the published account of several of these cases, that the artificial anus in the loin had a strong disposition to contract so as to interfere with the free passage of the *fæces*, and that repeated dilatation was necessary to secure the patency of the opening, the least neglect exposing the patient to considerable danger. It is also extremely difficult to adjust any apparatus in order to occlude the aperture, and prevent the discomfort arising from the continual escape of flatus and *fæces*; and, as the orifice is without the observation of the patient, he becomes very dependent on the assistance of others. These serious inconveniences, if experienced at all, are so, in a much less degree, when the anus is in the groin. The patient can cleanse and attend to the part himself. The aperture being nearer the surface, does not show the same disposition to contract, and it admits of being closed by a well-adjusted truss, when no need exists for relieving the bowels. And I think that these advantages, so important to the comfort of the patient, are by no means counterbalanced by any increased risk from opening the peritoneum. The operation is easily performed, and as no exploratory attempt is required to relieve the obstruction, a very small opening in the peritoneum is sufficient for the object in view. Even Callisen's operation is not free from all risk of peritonitis from the disturbance of parts;

and the magnitude of the incision probably renders the danger to life from its performance quite as great as that resulting from the operation in the left iliac region carefully and cautiously performed.

The abdomen may be opened in the left iliac region by a perpendicular incision, about three inches in extent, commencing two inches above Poupart's ligament, and an inch external to the course of the epigastric artery. The fibres of the abdominal muscles being cut across will help to keep the wound open. The peritoneum being divided, the distended colon will immediately protrude at the wound. A curved needle, armed with a silk ligature, being passed through the coats of the intestine, above and below, to prevent its receding when emptied of its contents, the bowel may be opened by a longitudinal incision, about an inch in length, in the space between the retaining ligatures.

In December last, Mr. Luke performed this operation on a man, aged sixty, in consequence of an obstruction produced by a stricture at the point of termination of the sigmoid flexure. The patient recovered, and is able to follow his occupation, his comfort being greatly promoted by the application of a truss over the orifice. In this case, the intestine was retained by a ligature passed through one of the appendices epiploicæ.

CHAPTER X.

CANCER OF THE RECTUM.

THE coats of the rectum are subject to carcinomatous degeneration in the three forms of *scirrhous*, *encephaloid*, and *colloid*. The scirrhous or fibrous form is sometimes developed in the submucous areolar tissue encircling the bowel at a particular spot, so as to lessen the area of the passage, and produce an annular stricture. Either of these forms of cancer may, however, invade the coats to a greater extent, contracting a considerable portion of the canal irregularly. Thus, in one instance of scirrhous which I examined after death, the rectum was diseased to the extent of two inches and a half. The upper opening would scarcely allow of the entrance of a small goose's quill; the lower would just admit the little finger; and between the two apertures the canal was irregularly dilated. Scirrhous degeneration may continue to increase until it narrows the gut to such an extent, that only a common-sized probe will pass through it, and may at length completely close the canal. In the London Hospital Museum, there is a fine specimen of the rather rare disease, colloid cancer, producing great thickening of the coats of the rectum, in some parts to the extent of

an inch and a quarter, and stricture of the bowel. The mucous membrane within the contraction is the seat of a large ulcer. Encephaloid cancer sometimes springs from the mucous membrane in the form of a fungus, projecting into the bowel and interfering with the passage. The fibrous cancer and the soft medullary not unfrequently become blended together. Thus, in the later stages of the disease, a fungous growth may arise from a part previously contracted by scirrhus deposit in the submucous areolar tissue. The rectum occasionally becomes blocked up and occluded by fungous growths; or the changes which take place may have a contrary effect, degeneration and softening, causing the coats to yield, and so increasing the calibre of the canal; or the impediment may be removed by sloughing of the softened growth, and detachments of portions of the morbid mass. A description of the progress of cancer of the rectum, and of the changes that occur in its advanced stage, is a description of the disorganisation and invasion of all the tissues of the part, and of the organs in its immediate neighbourhood, in various degrees in different cases. In some instances, the carcinomatous bowel becomes wedged in the pelvis, agglutinated and fixed to the surrounding parts, forming one mass of disease. Frequently softening and ulceration cause fistulous communications with neighbouring parts—with the vagina in the female, and with the bladder or urethra in the male; or the peritoneum may become perforated, and an opening made into the abdominal cavity. When

the passage is contracted, the intestine above the seat of disease becomes, as in simple stricture, dilated and hypertrophied.

Carcinoma may attack any part of the bowel, but generally affects the lower portion within three inches from the anus. It is liable to be developed also, though less frequently, at the point where the sigmoid flexure terminates in the rectum. The disease primarily developed in the intestine is sometimes confined to this organ and to the adjoining structures, no other part of the body being found after death secondarily affected. But this is not always so. The lymphatic glands in the vicinity of the rectum often become enlarged; the liver is occasionally invaded by tubercles, and the peritoneum also studded with scirrhous deposits, and similar disease may be developed in the lumbar glands, and other internal parts.

Cancer of the rectum generally commences insidiously. Its early symptoms are, in many instances, so similar to those of simple stricture, that the nature of the disease cannot be determined, or may not be suspected, until a considerable change has been effected in the condition of the bowel. The patient is troubled with flatulency, has difficulty in passing his motions, and strains in the effort to void them; and, as the disease makes progress, experiences pains about the sacrum, which gradually increase in severity, and dart down the limbs. By this time some alarm is probably excited; and the surgeon, being consulted, will be led to make an examination. On introducing his finger

into the rectum, he may find easily within reach a rigid contraction in the passage; but whether from cancer, or from chronic inflammatory thickening, it may be difficult to determine. The lancinating character of the pains will perhaps justify the more unfavourable conclusion. Should he feel any irregular nodules about the stricture, any hard solid tumor, or encounter a resistance like cartilage, or meet with softish tubercles which leave a bloody mark on the finger, then he will be able to pronounce on its carcinomatous nature. At a later period no difficulty is experienced. The surgeon feels a hard mass of disease, in which he may have some trouble in discovering the orifice of the passage, or finds rounded fungoid growths which bleed readily when touched. The disease may extend as low as the anus. An irregular red-looking growth sometimes protrudes externally, blocking up the passage or displacing the anus. The stools become relaxed and frequent, and contain blood, and, in passing, may give rise to severe suffering. Often also there is a thin, offensive, sanious discharge. As the disease makes progress, greater difficulty may be experienced in evacuating the bowels; or, in consequence of softening having caused the parts to yield, it may be the reverse, the motions passing with less trouble. The sufferings also increase: severe shooting pains are referred to the groins, back, or upper part of the sacrum, and often extend down the limbs, leaving a dull fixed uneasiness in the intervals. The constitution suffers in due course: the patient exhibits the blanched sallow look,

anxious countenance, and emaciated appearance, commonly observed in persons suffering from malignant disease. If complete obstruction of the bowel do not occur to accelerate a fatal termination, as not unfrequently happens, fresh troubles arise. In consequence of a communication becoming established between the rectum and urethra or bladder in males, flatus escapes from the urethra, and liquid fæces pass with the urine; and in females, motions are discharged at the vagina. The passage of part of the contents of the bowels by these unnatural channels greatly increases the misery of the patient's condition, rendering him an object of disgust to himself, and offensive to those about him. An ulcerated opening into the peritoneum, allowing the escape of feculent matter into the abdomen, may excite peritonitis, and thus bring the case to a fatal termination; or, the powers of life gradually giving way, the patient becomes hectic and exhausted, and worn out by this painful and distressing malady. There is great variety, however, in the degree of suffering, and even of constitutional derangement, attending this disease. The sufferings are in some instances excruciating; in others, comparatively slight. I lately saw a man whose anus was blocked up with carcinomatous fungus, and who had an opening into his urethra; but the pains were not severe, nor had his constitution suffered to any great extent. His chief complaint was of gas escaping from the urethra.

Cancer of the rectum occurs generally in middle age.

I have met with it rather more frequently in women than in men, and have found it a less common complaint than simple stricture.

All that can be obtained from remedies in this terrible disease is palliation of the symptoms and ease from pain. Any kind of mechanical interference, by dilatation or otherwise, irritates the parts, hastens the development of disease, and increases the patient's sufferings. The introduction of a bougie is always, indeed, hazardous, and I have met with one case, and seen the preparation of another, in which, the practitioner in using this instrument passed it through the softened tissues into the abdomen, and thereby accelerated the patient's death by causing peritonitis. After the nature of the case is clearly ascertained, examination, even with the finger, should be avoided. The patient should remain at rest, chiefly in the recumbent posture, and take a nourishing but not stimulating diet. The general health may be supported by tonics. The bowels must be kept open, and the motions rendered soft, if necessary, by small doses of castor oil. Pain can be alleviated by small doses of morphia night and morning, their strength being gradually increased as the effects of the remedy diminish. When the sufferings are severe, much ease may be obtained from the local application of chloroform. Some lint wetted with it is to be applied over the anus, and covered with oiled silk to check evaporation. In an extreme case, if opiates should lose their effects, the surgeon might have recourse to the inhalation of chloroform. In a

protracted case of cancer uteri lately under my care, in which drachm doses of the *liquor opii sedativus*, and strong laudanum injections, failed at last to relieve the paroxysms of pain, I employed this remedy, which, without being administered to the extent of destroying consciousness, gave marked ease, and was repeatedly resorted to for many days in succession, whenever there was a return of the paroxysmal pain.

Lisfranc, of Paris, proposed and practised excision of the carcinomatous rectum; and Dieffenbach states, that he performed the operation upon no less than thirty patients, not one of whom died soon afterwards. In some cases the disease returned in three months. In one, a very large cancer, with destruction of the external skin, and perforation of the bladder, appeared within a month; but the larger proportion of cases continued well many years afterwards.* That all these cases were really cancerous may be fairly questioned; and, I cannot but think, that an operation, which subjects the patient afterwards to the misery of incontinency of fæces, and to great risks from a stoppage of the opening in the contraction of the wound, and, in cases where the cancer is sufficiently developed to leave no doubt of its true nature, to an early return of the disease, ought to be condemned. The chance even of a prolongation of life is not worth acceptance on the terms offered by such an operation.

The rectum sometimes becomes so contracted or

* British and Foreign Medical Review, Oct. 1850.

blocked up by cancerous disease as entirely to close the passage for the fæces. Under these circumstances, the surgeon, having exhausted the usual means of giving relief, will have to consider the propriety of forming an artificial anus. I should think no surgeon would be much disposed to perform the operation in such a case ; but it would still be his duty, if the constitutional powers were not materially affected by the disease, to represent to the patient the chance yet left of obtaining a prolongation of life, and the painful conditions of the tenure, and then to undertake the operation in compliance with his wishes, and those of the friends.

The rectum appears to be liable to a form of cancerous ulcer and stricture which is not commonly recognised as a disease of the part—viz., *epithelial cancer*. Rokitansky noticed the disease, but does not seem to have fully satisfied himself as to its true nature. He states—“There are certain ulcers which occur only in the large intestine, and especially in the sigmoid flexure and the rectum, and are nearly allied to cancer, and particularly to cutaneous cancer. They are generally solitary, but there may be two, three, or four, at a time. They invariably give rise to intense pain.” He describes them as zonular, and having a callous base, upon which occasionally a discoloured, brownish, grumous discharge is visible, and as surrounded by a thick, tumid, spongy, carneous, and irregularly sinuous margin of mucous membrane. They generally cause a diminution of the capacity of the intestine, though not

to any considerable degree.* In the Museum of the College of Surgeons there is a rectum in which there is an intussusception of the upper within the lower part (No. 1380). In the Catalogue it is stated that at the lower end of the intussuscepted portion a thick, firm, cancerous tumor, like an epithelial cancer, extends nearly all round the intestine, as well as deeply into its coats, and projects far into its cavity. The disease certainly appears to be of the character described. About a year ago, I met with an epithelial growth, producing slight contraction, in the ascending colon of an old woman upon whom I had operated for strangulated hernia eight weeks before death. The elevated cancerous ulcer was found in the part which had been strangulated, and which I noticed at the time of the operation had been much bruised in the application of the taxis. She had suffered severe pain in the part, and considerable uneasiness in the lower part of the back, which occurred at intervals. The disease exhibited the appearances described by Rokitansky, and its true nature was clearly ascertained by microscopical examination.

Last autumn, a woman between fifty and sixty years of age came under my care at the London Hospital, with an obscure affection of the rectum, attended with an accumulation of feculent matter high up, in which the severe and fixed character of the pain, and other

* Manual of Pathological Anatomy, by Rokitansky, translated for Sydenham Society, vol. ii. p. 100.

circumstances, led me to suspect the existence of this disease at the termination of the sigmoid flexure; but as the patient, after being relieved of the more urgent symptoms, was discharged without my being able to verify my conclusion, it is needless to enter further into the details of the case. I allude to it, principally in order to refer to one symptom, which I once also observed in a case of stricture with ulceration, and which is very likely to mislead the practitioner: this is pain in the hip, accompanied with lameness to such an extent that the patient limps in walking. On careful examination, I could find nothing wrong in the joint; and, when she left the hospital, the lameness was almost entirely removed, though pain was still felt about the muscles of the hip.

Epithelial cancer may attack the integuments at the margin of the anus, producing a sore resembling cancer of the lip. Excision of the diseased structure would be the proper treatment for such a case.

CHAPTER XI.

FÆCES IMPACTED IN THE RECTUM.

IN the fourth volume of the Medical Observations and Inquiries, there is an anonymous paper, "On Painful Constipation from Indurated Fæces in the Rectum," said to have been written by Dr. Fothergill. Two cases of obstruction from this cause are related in this paper, and a few more of a similar character are to be found in the writings of White, Hey, Copland, and others. Cases of the kind are not very uncommon; yet the nature of the affection is liable to be overlooked by practitioners not alive to its occurrence. It appears, that the rectum becomes gradually dilated and blocked up by a collection of hard dry fæces, which the patient has not the power to expel; being unable, either from general debility or loss of tone in the distended bowel, to overcome the resistance of the sphincter to the passage of so great a body. Some indurated lumps from the sacs of the colon, on reaching the rectum, perhaps coalesce so as to form a large mass; or a quantity accumulated in the colon, on descending into the lower bowel, become impacted there. In several instances a plum-stone has been found in the centre of the mass, forming a sort of nucleus. Such a collection gives

rise to considerable distress and alarm, producing constipation, a sensation of weight and fulness in the rectum, tenesmus, and forcing pains which women describe as being equal in severity to those of labour. In cases of some duration, where the hardened fæces do not quite obstruct the passage, they excite irritation and a mucous discharge, which, mixing with recent feculent matter passing over the lump, causes the case to be mistaken for a diarrhœa. Injections thrown into the rectum have no effect in softening the indurated feculent mass: they act only on the surface, and generally return immediately, there being no room for their lodgment in the bowel. The surgeon, on introducing his finger at the anus, finds the bowel distended and blocked up with a large lump, which feels almost as hard as a stone. In such cases, the only mode of giving relief is by mechanical interference. The mass requires to be broken up and scooped out. For this purpose, a lithotomy-scoop is a proper instrument; but, as this is not always at hand, I have used generally a silver dessert-spoon, which I have had to pass sometimes nearly its whole length, in order to dislodge the hardened mass. The surgeon should be content with breaking up and extracting the larger portions, a few injections afterwards being sufficient for the removal of the remainder.

I have had to afford assistance in several cases of this painful and disagreeable affection. No less than three have come under my notice during the past six months. They were all persons enfeebled by age or

disease. One was the case of a lady, aged sixty-eight, whose constitutional powers were much weakened by long-existing carcinoma of the breast. Her sufferings were so severe that I made the examination in expectation of finding carcinoma of the rectum, or of the uterus, preventing the passage of the fæces. The second was the case of a man, aged forty-seven, whose leg I had amputated in the London Hospital a few weeks before, for disease of the tarsus. He had suffered from secondary hæmorrhage, had a bed-sore, and was much reduced at the time. The third was a bed-ridden old lady, aged eighty-four, who had taken largely of laudanum for a nervous affection of the throat. They were all readily relieved, by mechanical aid, from a state of considerable suffering and distress.

CHAPTER XII.

ANAL TUMORS AND EXCRESCENCES.

BESIDES the flaps and folds of integument consequent on external piles, other growths are developed in the immediate vicinity of the anus. Thus, tumors of a fibrous texture sometimes form in the subcutaneous areolar tissue, and, as they increase, become pedunculated. They seldom exceed the size of a chesnut. They have a firm feel, and their surface is generally irregularly lobulated. Mr. Hovell, of Clapton, recently sent me an unusually large tumor of this kind, which he had excised from a gardener forty-one years of age: it weighed upwards of half a pound, and was composed of fibrous tissue arranged in several lobes: it had been pendulous, and attached to the margin of the anus by a narrow neck. There was an ulcer on its surface, produced, no doubt, by pressure in sitting, and friction against the dress. This tumor had been seven years in forming. Few persons would allow a tumor to increase to such a size, in so inconvenient a situation, without seeking for relief from an operation. These fibrous growths may be easily and safely removed by excision.

Warts are not unfrequently developed around the anus, and they sometimes grow so abundantly as to constitute a considerable cauliflower-looking excres-

cence. They then form projecting processes, of various sizes, densely grouped together, many being of large size, with their summits lobulated, expanded, and elevated on narrow peduncles more or less flattened. I have removed a mass forming a tumor as large as the closed fist, separating the nates, and almost blocking up the passage for the fæces. When abundant, they are attended with an offensive, thin discharge. They occur in young grown-up people of both sexes, and originate in the irritation consequent on want of cleanliness. In some persons there is a strong disposition to the formation of warts; so that, without great attention, it is difficult to prevent their growth. If few in number, and small in size, they may be destroyed with strong nitric acid. They generally require, however, to be removed by excision, which is the quickest and most effectual mode of treatment. This may be effected with a curved pair of scissors. The operation is rather painful, and should therefore be performed whilst the patient is under the influence of chloroform. Wet lint may be applied to the part; and the patient should be directed afterwards to check any tendency to a reproduction of the growths, by great cleanliness, and the use of a lotion of the oxide of zinc.

THE END.



APRIL.

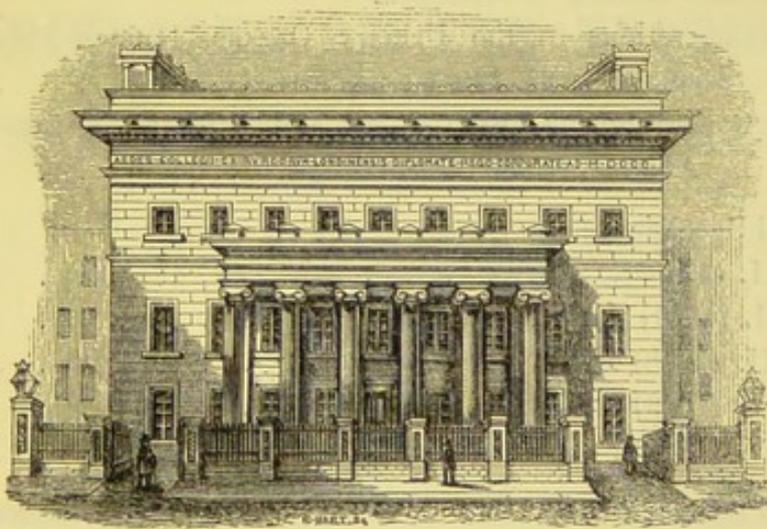
WORKS
IN
MEDICINE, SURGERY,
ANATOMY, &c.

PUBLISHED BY

SAMUEL HIGHLEY, 32, FLEET STREET,

Bookseller, by Appointment,

to



The Royal College of Surgeons of England.

1851.

MUSEUM CATALOGUES

OF THE

ROYAL COLLEGE of SURGEONS of ENGLAND.

All in Quarto.

Physiological Specimens in Spirits, with Plates:—

Vol. I. (1833)	£1 11 6
“ II. (1834)	1 11 6
“ III. (1836)	1 11 6
“ IV. (1838)	1 11 6
“ V. (1840)	1 11 6

Physiological Specimens in a Dry state (Vascular and Miscellaneous)

(1831)	0 3 0
------------------	-------

Human and Comparative Osteology (1831)	0 12 0
--	--------

Natural History in Spirits (<i>Invertebrata</i>) (1830)	0 5 6
---	-------

Monsters and Malformations (1831)	0 3 0
---	-------

Fossil Mammalia and Aves, with Plates (1845)	1 1 0
--	-------

Calculi, and other Animal Concretions:—

Part I. Concretions in the Urinary Organs, Human (1842), coloured, £1. 11s. 6d.; plain	0 10 0
---	--------

“ II. Concretions in the Urinary and Digestive Organs of Animals (1845), coloured, £1. 1s.; plain.	0 8 0
---	-------

Pathological Specimens:—

Part I. (1846)	0 7 0
--------------------------	-------

“ II. (1847)	0 10 6
------------------------	--------

“ III. (1848)	0 10 6
-------------------------	--------

“ IV. (1849)	0 12 6
------------------------	--------

“ V. (1849)	0 7 0
-----------------------	-------

Histological Specimens, Vol. I. with Plates. (Elementary Tissues of

Vegetables and Animals, 1850)	1 11 6
---	--------

Memoirs, descriptive of objects in the Museum of unusual rarity and interest:—

On the Pearly Nautilus (<i>Nautilus Pompilius</i>), with Plates (1832)	0 15 0
---	--------

On an Extinct Gigantic Sloth (<i>Mylodon robustus</i>), with Plates (1842)	1 11 6
---	--------

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

New Works.

PHARMACOPŒIA LONDINENSIS.

TRANSLATED

By RICHARD PHILLIPS, F.R.S. L. & E.

With copious Notes and Illustrations.

ALSO, A TABLE OF CHEMICAL EQUIVALENTS.

Octavo.—*In the press.*

OBSERVATIONS ON THE
DISEASES OF THE RECTUM.

By T. B. CURLING, F.R.S.

SURGEON TO, AND LECTURER ON SURGERY AT, THE LONDON HOSPITAL, ETC.

Octavo, 5s.

A PRACTICAL TREATISE
ON THE
DISEASES OF THE TESTIS
AND OF
THE SPERMATIC CORD AND SCROTUM.

With Illustrations.

By T. B. CURLING, F.R.S.

SURGEON TO THE LONDON HOSPITAL, ETC.

Octavo, 12s.

ON
ARTICULATE SOUNDS,
AND ON
THE CAUSES AND CURE OF
IMPEDIMENTS OF SPEECH.

By JOHN BISHOP, F.R.S., F.R.C.S.

MEMBER OF THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF
ENGLAND.

Octavo, 4s.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

ON
THE CAUSES AND TREATMENT
OF
DEFORMITIES OF THE HUMAN BODY.

Illustrated with upwards of Sixty Engravings and numerous Cases.

By JOHN BISHOP, F.R.S., F.R.C.S.,

MEMBER OF THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

One volume, Octavo.—*In the press.*

THE
CORRELATION
OF
P H Y S I C A L F O R C E S.

By W. R. GROVE, M.A. F.R.S.

Second Edition, revised and enlarged. Octavo, 5s.

CLINICAL REPORTS
ON
THE USE OF GLYCERENE
IN
THE TREATMENT OF CERTAIN FORMS
OF
DEAFNESS.

By THOMAS WAKLEY, F.R.C.S.

OPERATING SURGEON TO THE ROYAL FREE HOSPITAL, LONDON.

Edited by T. W. TINDALL ROBERTSON, Resident Surgeon to the Royal Free Hospital.

Octavo, 3s.

PRACTICAL OBSERVATIONS
ON
THE TEETH,

By HENRY JORDAN, DENTIST.

Small Octavo.—*Nearly Ready.*

AN IMPROVED METHOD
OF TREATING
STRICTURE OF THE URETHRA:

WITH ENGRAVINGS OF THE NEW INSTRUMENTS,

And illustrated with Cases occurring in the Hospital.

By THOMAS WAKLEY, F.R.C.S.E.

SURGEON TO THE ROYAL FREE HOSPITAL.

Nearly ready.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

ON DISEASES
OF THE
GENITO-URINARY ORGANS.

PART I.

GONORRHŒA
AND ITS CONSEQUENCES.

By HENRY JAMES JOHNSON, F.R.S.E.

FORMERLY LECTURER ON ANATOMY AND PHYSIOLOGY, AND SENIOR ASSISTANT-SURGEON
TO, ST. GEORGE'S HOSPITAL.

8vo.

PREPARING FOR PUBLICATION,

PART II.

STRICTURES OF THE URETHRA.

PRACTICAL OBSERVATIONS
ON THE TREATMENT OF
STRICTURE OF THE URETHRA
AND
FISTULA IN PERINEO.

Illustrated with Cases and Drawings of these Affections.

WITH AN APPENDIX,

containing various Letters, Papers, &c. by Professor SYME, Dr. MÜLLER, and the AUTHOR,
connected with the subject of the operation of the Perineal Section.

By JOHN LIZARS,

Late Professor of Surgery to the Royal College of Surgeons,
and Senior Operating Surgeon to the Royal Infirmary, Edinburgh.

Octavo, Plates, price 3s. 6d.

THE
PHILOSOPHY OF SPIRITS
IN
RELATION TO MATTER;

Shewing the real Existence of two very Distinct Kinds of Entity which unite to form the
different Bodies that compose the Universe—Organic and Inorganic. By which the Pheno-
mena of Light, Electricity, Motion, Life, and Mind, are reconciled and explained.

By C. M. BURNETT, M.D.

One vol. 8vo. price 9s.

AN ATTEMPT
AT A
CHEMICO-PHYSICAL MINERAL-SYSTEM.

By SAMUEL HIGHLEY, JUN.

Octavo.—*Nearly ready.*

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

THE
ANATOMICAL REMEMBRANCER;
OR,
COMPLETE POCKET ANATOMIST:

Containing a Concise Description of the Bones, Ligaments, Muscles, and Viscera; the Distribution of the Nerves, Blood-vessels, and Absorbents; the Arrangement of the several Fasciæ; the Organs of Generation in the Male and Female; and the Organs of the Senses.

Fourth Edition, revised and greatly improved. Royal 32mo. price 3s. 6d.

A MANUAL
OF THE
DISSECTION OF THE HUMAN BODY.

By LUTHER HOLDEN, F.R.C.S.

Demonstrator of Anatomy at St. Bartholomew's Hospital.

Three Parts, price 12s.

* * * The Fourth and last Part will shortly be published.

DR. HOOPER'S
PHYSICIAN'S VADE-MECUM,
OR MANUAL OF
THE PRINCIPLES AND PRACTICE OF PHYSIC.

NEW EDITION, considerably enlarged and improved;

WITH AN OUTLINE OF GENERAL PATHOLOGY AND THERAPEUTICS.

By AUGUSTUS GUY, M.D. CANTAB.

Small Octavo, price 10s. 6d.

S. HIGHLEY'S GENERAL CATALOGUE
OF
MODERN MEDICAL BOOKS,

With their Dates and Prices.

To which is added, an Index of Subjects, with the Authors who have written upon them.

Octavo.—*Nearly ready.*

THE BRITISH AND FOREIGN
MEDICO-CHIRURGICAL REVIEW;

Being a Combination of

"The Medico-Chirurgical Review," formerly edited by Dr. JAMES JOHNSON; and

"The British and Foreign Medical Review," formerly edited by Dr. FORBES.

Published Quarterly, on the 1st of January—April—July—and October, price 6s. each.

Recently Published.

SUPPLEMENT TO HIGHLEY'S MEDICAL CATALOGUE.

Containing the Books published during 1848, 1849, and 1850.
Price 6d. ; or post paid on receipt of Six additional Postage Stamps.

ASHWELL ON THE DISEASES OF WOMEN.

A Practical Treatise on the Diseases peculiar to Women, illustrated by Cases derived from Hospital and Private Practice. By SAMUEL ASHWELL, M.D. late Obstetric Physician and Lecturer to Guy's Hospital. *Third Edition*, revised and improved, 8vo. price 21s.

BILLING'S MEDICINE.

First Principles of Medicine. By ARCHIBALD BILLING, M.D. F.R.S. Member of the Senate of the University of London; Fellow of the Royal College of Physicians, &c. *Fifth Edition*, revised and improved, with copious Index, 8vo. price 10s. 6d.

PARIS'S PHARMACOLOGIA (*Ninth Edition*);

Being an extended Inquiry into the Operations of Medicinal Bodies, upon which are founded the Theory and Art of Prescribing. To which are for the first time appended, very extensive Tables of those Medicinal Substances which are Chemically and Physiologically incompatible with each other. By J. A. PARIS, M.D. F.R.S. President of the Royal College of Physicians. *Ninth Edition*, 8vo. price 20s.

BELL ON THE TEETH.—*Second Edition*.

The Anatomy, Physiology, and Diseases of the Teeth. By THOMAS BELL, F.R.S. F.L.S. F.G.S. Lecturer on Diseases of the Teeth at Guy's Hospital, and Professor of Zoology in King's College. Containing upwards of 100 Figures, illustrative of the Structure, Growth, Diseases, &c. of the Teeth. *Second Edition*, 8vo. 14s.

MORGAN ON DISEASES OF THE EYE.—*Second Edit.*

Lectures on Diseases of the Eye, delivered at Guy's Hospital. By JOHN MORGAN, F.L.S. Illustrated with numerous Coloured Plates. *A New Edition*, carefully revised and enlarged, with Notes, by JOHN F. FRANCE, Surgeon of the Eye Infirmary and Lecturer on Ophthalmic Surgery at Guy's Hospital. 8vo. price 18s.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

TRAVERS ON INFLAMMATION.

The Physiology of Inflammation and the Healing Process. By
BENJAMIN TRAVERS, F.R.S. Surgeon Extraordinary to the Queen, &c. 8vo. 7s.

LIZARS' PRACTICAL SURGERY.—*New Edition.*

A System of Practical Surgery. Corrected and Enlarged, including all
the recent Discoveries and Operations. With numerous Explanatory Plates. By
JOHN LIZARS, late Professor of Surgery to the Royal College of Surgeons, and Senior
Operating Surgeon to the Royal Infirmary of Edinburgh. *Second Edit.* 8vo. 12s. 6d.

COL. HAMILTON SMITH'S WORK ON MAN.

The Natural History of the Human Species, its Typical Forms,
Primæval Distribution, Filiations, and Migrations. Illustrated by numerous coloured
Plates. Foolscap 8vo. 7s. 6d.

CALLAWAY ON INJURIES OF THE SHOULDER-JOINT.

On Dislocations and Fractures of the Clavicle and Shoulder-Joint :

BEING THE JACKSONIAN PRIZE ESSAY FOR 1846.

By THOMAS CALLAWAY, F.R.C.S.

Demonstrator of Anatomy at Guy's Hospital, &c. With Plates. 8vo. 7s.

COOTE'S HOMOLOGIES OF THE HUMAN SKELETON.

The Homologies of the Human Skeleton. By HOLMES COOTE, F.R.C.S.
Demonstrator of Anatomy at St. Bartholomew's Hospital. 8vo. 4s. 6d.

JUDD ON SYPHILIS AND URETHRITIS.

A Practical Treatise on Urethritis and Syphilis; including Observations
on the Power of the Menstruous Fluid, and of the Discharge from Leucorrhœa and
Sores, to produce Urethritis: with a variety of Examples, Experiments, Remedies, and
Cures. By WILLIAM H. JUDD, Surgeon in Ordinary to His Royal Highness Prince
Albert; and Surgeon-Major in the Scots Fusilier Guards. With numerous coloured
Plates. 8vo. price £1. 5s.

FEMORAL RUPTURE, AND ITS ANATOMY :

With a New Mode of Operating applicable in cases of Strangulated
Hernia generally. By JOHN GAY, F.R.C.S. Eng.; Surgeon to the Royal Free Hos-
pital. 4to. with Plates, 10s. 6d.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

CRIMINAL JURISPRUDENCE, CONSIDERED

In relation to Mental Organization. By M. B. SAMPSON. *Second Edition*, enlarged, 8vo. 5s.

BECK'S MEDICAL JURISPRUDENCE.—*Seventh Edit.*

Elements of Medical Jurisprudence. By Dr. THEODORIC BECK, and Dr. J. BECK. *Seventh Edition*, 8vo. £1. 1s.

INSANITY TESTED BY SCIENCE,

And shown to be a Disease rarely connected with permanent Organic Lesion of the Brain. By C. M. BURNETT, M.D. 8vo. 5s.

HUGMAN ON HIP-JOINT DISEASE.

A Practical Treatise on Morbus Coxarius, or Hip-joint Disease ; shewing the Advantages to be derived from a system of Mechanical Management. By W. C. HUGMAN, Surgeon to the Verral Institution for the Treatment of Spinal Disease and Distortion, &c. 8vo. 5s. with Plates.

HASSALL ON THE WATER SUPPLY OF LONDON.

A Microscopic Examination of the Water supplied to the Inhabitants of London and the Suburban Districts. Illustrated by coloured Plates, exhibiting the Living Animal and Vegetable Productions contained in the Water supplied by the following Companies :—

Grand Junction.	Vauxhall and Southwark.	New River.
West Middlesex.	Lambeth.	Hampstead.
Chelsea.	East London.	Kent.

Together with an Examination, Microscopic and General, of the Sources of Supply of the several existing Companies ; as well as of the Henley-on-Thames and Watford Plans, &c. &c. By ARTHUR HILL HASSALL, M.B., F.L.S. 8vo. 4s. 6d.

By the same Author,—The

MICROSCOPIC ANATOMY of the HUMAN BODY in Health and Disease. 2 vols. 8vo. with coloured Plates, containing 400 Illustrations, £2. 5s. boards.

HISTORY of the BRITISH FRESH-WATER ALGÆ; comprising Descriptions and Coloured Delineations of nearly 500 Species, including the Desmidiæ and Diatomaceæ. 2 vols. 8vo. £2. 5s.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

TRANSACTIONS OF MEDICAL SOCIETY OF LONDON;

CONTAINING PAPERS ON

The Use of the Microscope in Anatomy, Physiology, and Pathology. By Mr. T. Bell, F.R.S.
The Cause and Treatment of Stammering. By Mr. J. Bishop, F.R.S.
On the Nervous System, particularly the Excito-motory, or Reflex-Function. By Mr. G. Pilcher.
On the Prevention and Treatment of Apoplexy and Hemiplegia. By Dr. Marshall Hall.
On the Incubation of Insanity. By Dr. Forbes Winslow.

ALSO PAPERS BY

Dr. J. R. Bennett; Mr. Bryant; Dr. Crisp; Mr. Dendy; Dr. Garrod; Mr. Headland;
Mr. Hutchinson; Mr. Linnecar; Mr. Robarts; Mr. Stedman; Dr. T. Thomson;
Dr. Waller, &c. 8vo. Plates, 9s.

LAWRENCE'S ANATOMICO-CHIRURGICAL PLATES.
THE SIZE OF NATURE.

THE NOSE, MOUTH, LARYNX, AND FAUCES.

Anatomico-Chirurgical Views of the Nose, Mouth, Larynx, and Fauces;
with Explanations and References, and an Anatomical Description of the Parts. By
W. LAWRENCE, F.R.S. Surgeon to St. Bartholomew's Hospital. Folio, 10s. 6d. plain;
£1. 1s. coloured.

THE MALE AND FEMALE PELVIS.

* * * The Subjects were selected by Mr. Lawrence, who superintended the Dissections,
most of which he executed himself, and furnished the Descriptions and Explanatory
References. Folio, 10s. 6d. plain; £1. 1s. coloured.

WORMALD AND M^cWHINNIE'S SKETCHES.

A Series of Anatomical Sketches and Diagrams: with Descriptions and
References. By THOMAS WORMALD, Assistant-Surgeon to St. Bartholomew's Hos-
pital; and A. M. M^cWHINNIE, Lecturer on Comparative Anatomy at St. Bartholomew's
Hospital. 4to. £1. 6s.

SELECTA È PRÆSCRIPTIS (*Tenth Edition, Improved*):

Selections from Physicians' Prescriptions; containing—

Lists of the Phrases, Contractions, &c. used in Prescriptions, with Explanatory Notes.

The Grammatical Construction of Prescriptions.

Rules for the Pronunciation of Pharmaceutical Terms.

A Prosodiacal Vocabulary of the Names of Drugs.

A Series of (350) Abbreviated Prescriptions, illustrating the use of the preceding Terms.

A KEY, containing the same in an Unabbreviated Form, with Literal Translation.

Tenth Edition, improved, 32mo. 5s.

CLOQUET ON HERNIA ;—BY M^cWHINNIE.

An Anatomical Description of the Parts concerned in Inguinal and Femoral Hernia. Translated by A. M. M^cWHINNIE, Teacher of Practical Anatomy at St. Bartholomew's Hospital. With Explanatory Notes. Royal 8vo. Plates, 5s.

GRAY'S SUPPLEMENT TO THE PHARMACOPŒIA ;

Being a concise but comprehensive Dispensatory and Manual of Facts and Formulæ for the Chemist and Druggist and General Practitioner.

NEW EDITION, by THEOPHILUS REDWOOD,
Professor of Chemistry and Pharmacy to the Pharmaceutical Society of Great Britain.
8vo. £1. 2s.

STOWE'S CHART OF POISONS.—*Tenth Edition.*

A Toxicological Chart, exhibiting at one view the Symptoms, Treatment, and Mode of Detecting the various Poisons, Mineral, Vegetable, and Animal: to which are added, concise Directions for the Treatment of Suspended Animation. By W. STOWE, M.R.C.S. *Tenth Edition*, varnished and mounted on cloth, with roller, 6s. ; or 2s. the plain Sheet.

SMELLIE'S OBSTETRIC PLATES (*New Edition*):

Being a Selection from the more Important and Practical Illustrations contained in the original work, with Anatomical Descriptions and Practical Directions. *New Edition*, 8vo. 5s.

REES ON DISEASES OF CHILDREN.—*Second Edition.*

The Diseases of Children ; their Symptoms and Treatment. By GEORGE AUGUSTUS REES, M.D. Surgeon to the General Dispensary for Children. *Second Edition*, 12mo. 5s.

By the same Author,

ATALEKTASIS PULMONUM ; or, Closure of the Air-cells of the Lungs in Children. 2s.

MANUAL OF AUSCULTATION AND PERCUSSION.

Principally Compiled from Meriédec Laennec's Edition of Laennec's Great Work. By J. B. SHARPE, M.R.C.S. *Third Edition*, 3s.

BENNETT ON HYDROCEPHALUS.

An Essay on the Nature, Diagnosis, and Treatment of Acute Hydrocephalus. By J. RISON BENNETT, M.D. Assistant-Physician to St. Thomas's Hospital. 8vo. 8s.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

Dr. JAMES JOHNSON'S WORKS.

PRACTICAL RESEARCHES ON GOUT. 8vo. price 5s. 6d.

A TOUR IN IRELAND, with Meditations and Reflections. 8vo. price 8s. 6d.

EXCURSIONS TO THE PRINCIPAL MINERAL WATERS OF ENGLAND. 8vo. 5s.

CHANGE OF AIR, or the Pursuit of Health and Recreation. *Fourth Edition*, 8vo. 9s.

THE ECONOMY OF HEALTH, or the Stream of Human Life from the Cradle to the Grave. *Fourth Edition*, 8vo. price 6s. 6d.

AN ESSAY ON INDIGESTION. *Tenth Edition*, 8vo. price 6s. 6d.

THE INFLUENCE OF TROPICAL CLIMATES ON EUROPEAN CONSTITUTIONS. *Sixth Edition*, with important Additions, by MR. J. RANALD MARTIN, 8vo. 18s.

CHILDS ON GONORRHŒA.

Gonorrhœa and its Consequences. With a short Historical Sketch of the Venereal Disease. By G. B. CHILDS, F.R.C.S. Eng. &c. 12mo. 4s.

UNDERWOOD ON DISEASES OF CHILDREN.--*Tenth Ed.*

With Directions for the Management of Infants. Revised and enlarged by Dr. HENRY DAVIES, late Lecturer on the Diseases of Children at St. George's Hospital. 8vo. 15s.

HOOPER'S MEDICAL DICTIONARY.—*Eighth Edit.*

Revised and improved by Dr. K. GRANT. 8vo. £1. 10s.

COOPER'S SURGICAL DICTIONARY.—*Seventh Edit.*

A Dictionary of Practical Surgery. By SAMUEL COOPER, late Professor of Surgery in University College. *Seventh Edition*, revised and enlarged, £1. 10s.

ARMY MEDICAL MUSEUM, CHATHAM.

(Under the Superintendence of the Army Medical Department.)

Anatomical Drawings from the Pathological Museum at Fort Pitt, Chatham. Fasciculus I. to III. Folio, price 15s. each.—Fasciculus IV. (containing Diseases of the Heart and Blood-vessels), folio, price 15s.—Fasciculus V. (containing Diseases of the Urinary Organs), folio, 20s.

GUY'S HOSPITAL REPORTS.

FIRST SERIES, complete in 7 vols. (1836 to 1842), price £4. 11s.

SECOND SERIES, Vol. I. 16s. 6d.; Vols. II. III. and IV. 13s. each; Vol. V. 7s.; Vol. VI. 14s. (1843 to 1850).

The Publisher has lately perfected a few sets from the commencement in 1836 to 1849.

STANDARD WORKS
ON THE
DISEASES OF TROPICAL CLIMATES.

I.

BRYSON ON THE DISEASES, &c. OF AFRICA.

(By Order of the Lords Commissioners of the Admiralty.)

Report on the Climate and Diseases of the African Station. Compiled from Documents in the Office of the Director-General of the Medical Department, under the immediate direction of Sir W. BURNETT, M.D. &c. By ALEXANDER BRYSON, M.D. Royal 8vo. half-bound, 8s.

II.

DANIELL ON THE DISEASES, &c. OF GUINEA.

Sketches of the Medical Topography and Native Diseases of the Gulf of Guinea, Western Africa. By WILLIAM F. DANIELL, M.D., Assistant-Surgeon to the Forces. 8vo. 10s. 6d.

III.

DR. JAMES JOHNSON AND MR. J. RANALD MARTIN.

The Influence of Tropical Climates on European Constitutions. By Dr. JAMES JOHNSON. *Sixth Edition*, with important Additions, by Mr. J. R. MARTIN, late Presidency Surgeon, &c., Calcutta. 8vo. 18s.

IV.

BOYLE'S DISEASES OF AFRICA.

A Practical Medico-Historical Account of the Western Coast of Africa: together with the Symptoms, Causes, and Treatment of the Fevers and other Diseases of Western Africa. By JAMES BOYLE, late Colonial Surgeon to Sierra Leone. 8vo. 12s.

V.

ROGERS ON CHOLERA IN THE MADRAS ARMY.

Reports on Asiatic Cholera, in Regiments of the Madras Army, from 1823 to 1844; with Introductory Remarks on its Modes of Diffusion and Prevention, and Summary of the General Method of Treatment in India. By SAMUEL ROGERS, F.R.C.S., and Surgeon of the Madras Army. 8vo. 10s. 6d.

VI.

SIR J. ANNESLEY'S DISEASES OF INDIA.—*Second Edit.*

Sketches of the most Prevalent Diseases of India, comprising a Treatise on Epidemic Cholera in the East, &c. &c. By Sir JAMES ANNESLEY, late of the Madras Medical Establishment. *Second Edition*, 8vo. 18s.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

NEW WORKS
ON
HOMŒOPATHY.

HOMŒOPATHIC MATERIA MEDICA.

(Published under the Superintendence of the Hahnemann Society).

The Pathogenetic Cyclopædia. A Systematic Arrangement and Analysis of the Homœopathic Materia Medica. Vol I., containing the Symptoms of the Disposition, Mind, and Head. By R. E. DUDGEON, M.D. 8vo. 18s.

SAMPSON'S HOMŒOPATHY.—*Third Edition.*

Homœopathy; its Principle, Theory, and Practice.

By MARMADUKE B. SAMPSON. *Third Edition*, enlarged, 8vo. 5s. 6d.

TRUTHS AND THEIR RECEPTION CONSIDERED

In relation to the Doctrine of Homœopathy. By M. B. SAMPSON.

To which are added, Essays by other writers on the Principles and Statistics of Homœopathic Practice. *Second Edition*, 8vo. 5s. 6d.

(Published under the Superintendence of the British Homœopathic Association).

PROGRESS OF HOMŒOPATHY.

(Published under the Superintendence of the English Homœopathic Association).

A Series of Papers illustrative of the Position and Prospects of Medical Science. 8vo. 5s.

PHARMACOPŒIA HOMŒOPATHICA.

Edidit F. F. QUIN, M.D. 8vo. 7s.

HAHNEMANN DE VIRIBUS MEDICAMENTORUM.

Fragmenta de Viribus Medicamentorum positivis sive in Sano Corpore Humano observatis. A SAMUELE HAHNEMANN, M.D. Edidit F. F. QUIN, M.D. 8vo. 7s.

BRITISH JOURNAL OF HOMŒOPATHY.

Edited by Drs. Drysdale, Russell, and Dudgeon.

Published Quarterly, 5s. each Number.

PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

MR. T. M. STONE'S MEDICAL PORTRAIT GALLERY

A Series of
ELEGANTLY-EXECUTED SKETCHES
OF
EMINENT MEDICAL MEN.

Drawn on Stone by MAGUIRE.

Printed on India Paper, price 5s. each (Size, 13 inches by 10 inches).

- MR. J. AVERY . . . *Surgeon to the Charing-Cross Hospital.*
DR. G. BUDD . . . *Professor of Medicine at King's College.*
MR. G. BUSK . . . *Surgeon to the "Dreadnought" Hospital Ship.*
MR. WM. COULSON . . *Surgeon to St. Mary's Hospital.*
MR. WM. FERGUSSON . *Professor of Surgery at King's College.*
DR. JOHN FORBES . . *Physician in Ordinary to the Queen's Household.*
MR. E. FORBES . . . *Professor of Botany in King's College.*
MR. H. HANCOCK . . *Lecturer on Surgery to the Charing-Cross Hospital.*
MR. J. R. MARTIN . . *late Presidency Surgeon, Calcutta.*
MR. J. PAGET . . . *Professor of Surgery to the Royal College of Surgeons.*
MR. F. C. SKEY . . . *Assistant-Surgeon to St. Bartholomew's Hospital.*
MR. J. F. SOUTH . . *Surgeon to St. Thomas's Hospital.*
DR. R. B. TODD . . . *Professor of Physiology in King's College.*
JOHN HUNTER . . . *from a Drawing by Sir N. Holland, in the possession
of the Royal College of Surgeons of Engl.—7s. 6d.*

Also, Portraits

OF

SIR WM. BURNETT . . .	£1 1 0	MR. W. LAWRENCE . . .	£1 1 0
SIR WM. ELLIS	0 5 0	DR. J. A. PARIS, <i>President</i> } <i>Roy. Coll. of Physicians</i> }	1 1 0
MR. R. D. GRAINGER . . .	0 10 6	MR. SIMON, <i>Officer of</i> } <i>Health, City of London</i> }	0 5 0
DR. JAS. JOHNSON . . .	0 10 6		

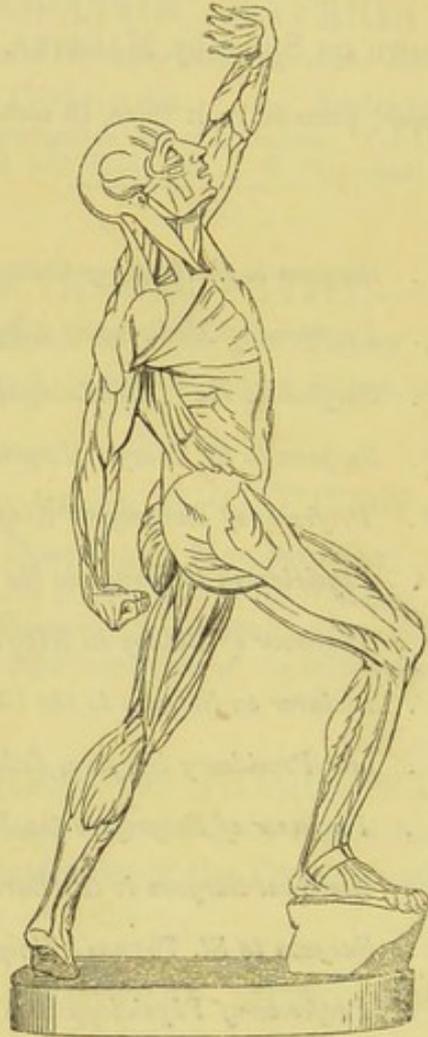
PUBLISHED BY S. HIGHLEY, 32, FLEET STREET.

HAND-BOOK OF ANATOMY
FOR
STUDENTS OF THE FINE ARTS.

Containing a Description of the Skeleton, and the External Muscles of the Human Figure;
the Action of each Muscle being explained in connection with its Name and Situation.
With Illustrations on Wood.

By J. A. WHEELER.

New Edition, improved. Fcp. 8vo. price 2s. 6d.



AN ANATOMICAL STATUETTE,
EXHIBITING THE EXTERNAL MUSCLES OF THE HUMAN BODY,

CAREFULLY MODELLED, AND EXPRESSLY ADAPTED FOR THE USE OF ARTISTS,
And others interested in the Study of Anatomy.

HEIGHT—27 inches. Accompanied by

A KEY, containing OUTLINE VIEWS of the Statuette in its several Aspects,
With References to the Names of the Muscles.

Price 15s. from the Mould; or carefully coloured, 30s.: packed in a Case for the Country,
4s. extra.



