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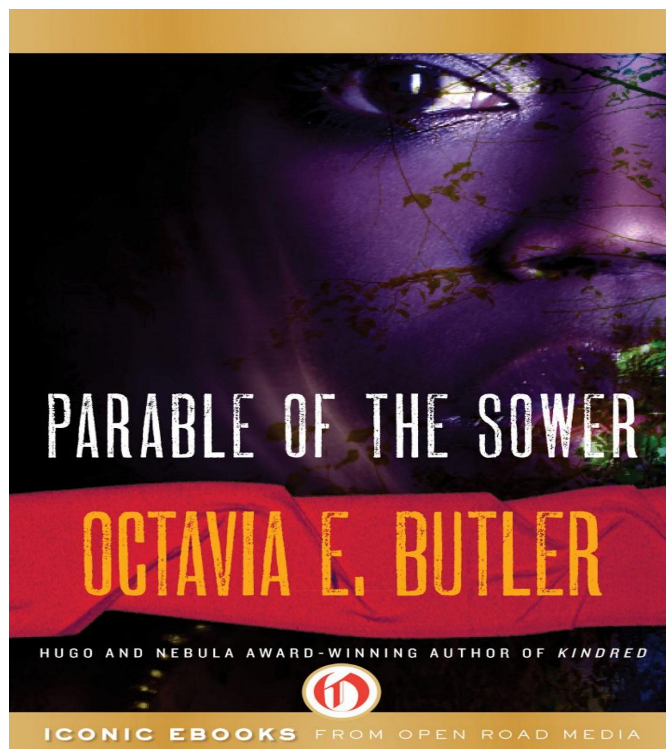

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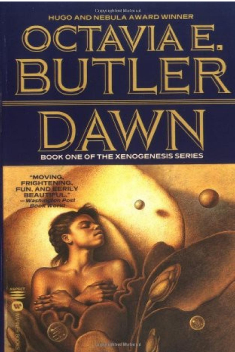

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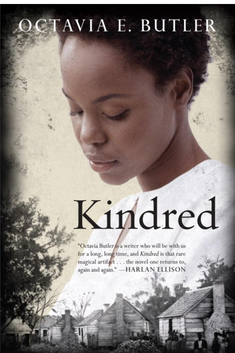

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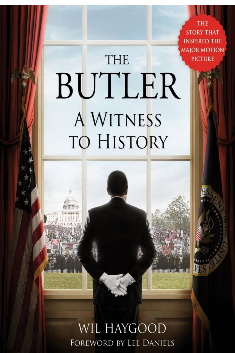

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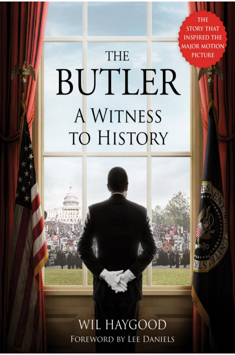

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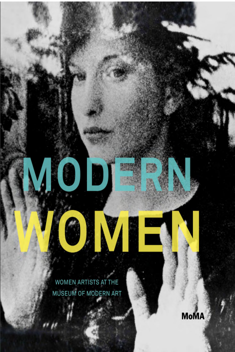

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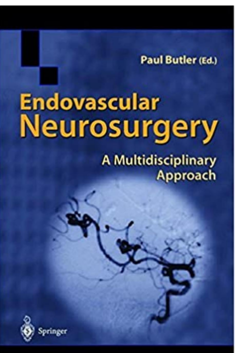

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purposes local anesthesia is sufficient. One will furthermore often need the aid of position. The ordinary digital examination may be made with the patient upon the side or back. When an ordinary speculum is used a position corresponding to Sims' for gynecological work is far preferable. For more thorough work when the long, tubular instruments are used, the knee-chest position is necessary. The specialists have devised certain elaborate chairs, instruments, and methods by which exceedingly complete and satisfactory exposures of twelve or fifteen inches of rectal and colonic mucosa can be made. What is written here, however, is not for their purposes, but rather for those of the general practitioner, who must work with ordinary means and methods. The knee-chest position, for instance, can be assumed upon the ordinary table or it may be facilitated by certain additions made to a regular operating table. With all these facilities and the peculiar skill which specialization produces it is possible to make striking demonstrations of the valvular arrangement of the rectal mucosa, and of the varying degrees of obstruction which mucous folds or cicatrices may produce, as well as to successfully dilate or divide them. In the hands of a limited number of skilled surgeons local treatment of obstipation, as well as of various other conditions of the sigmoid or upper rectum, has become extremely satisfactory. These are, however, in the writer's estimation, methods and procedures which are scarcely within the domain of the general practitioner or even the general surgeon, as they require a degree of peculiar facility and an amount of time which can scarcely be expected of him. Therefore the conditions and methods of treatment here considered will be limited to those intended for general use.

CONGENITAL DEFECTS AND MALFORMATIONS OF THE RECTUM AND ANUS.

The lowermost portions of the intestinal tube are by far the most common sites of congenital anomalies and defects. These rarely occur in the direction of excess, rather of atresia or entire deficiency. The lower end of the alimentary tube is differentiated from the

balance of the original neurenteric canal, and connected with the exterior, in ways similar to those followed at its upper extremity. The canal itself should early become obliterated at a point whose site is marked by that small collection of lymphoid tissue known as the *coccygeal* or *Luschka's body*, corresponding in this respect and location to the pituitary body at its other extremity. The rudimentary rectum is then connected with the surface by the formation of a depression and disappearance of tissue in just the same way that the mouth is formed, and as about the mouth we find atresia or incomplete communication, so we may find the same condition in various expressions about the termination of the rectum. Moreover, there may occur also more or less arrest or abnormal development of the tissues which eventually shut off the rectum from the genito-urinary tract. In consequence, we have various degrees of rectal *atresia*, and, finally, actual *imperforation*. Beyond this we may more rarely meet with complete absence of the rectum, and even of some portion or of nearly all of the entire large intestine. In one case under my observation this entire tract was represented by little more than a mere cord.

PLATE LII

Cancerous Stricture of Rectum. Bowel Laid Open for Inspection.

The mildest degree of such malformation refers to partial occlusion of some portion of the rectum, or extreme smallness of its natural opening, either of which constitutes essentially a stricture of congenital origin, which may be sufficiently tight to barely allow passage of meconium. Such strictures may escape notice for a considerable length of time and will always tend to produce dilatation and consequent displacement of bowel above.

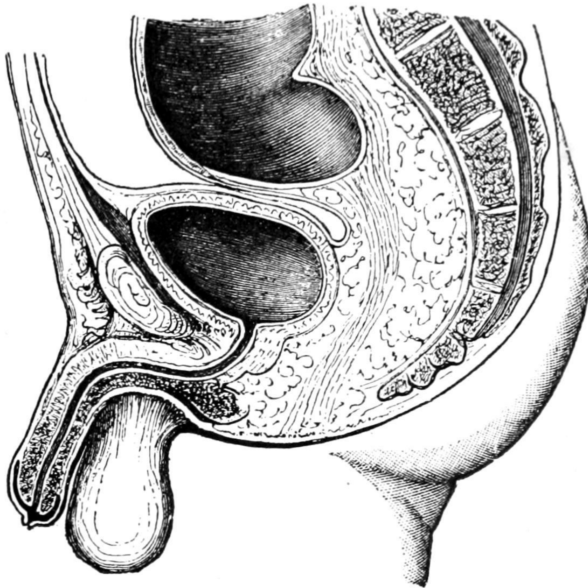
Ordinary *imperforate anus* is produced by its closure by a more or less thick, membranous diaphragm, which may act, in some cases, like a thin but imperforate hymen, or, in others, be so dense and massive as to act more like a plug than a partition. The thinner the diaphragm and the more perfect its structure as such the simpler the case, for it simply needs perforation, with sufficiently frequent subsequent dilatation to maintain the proper size of the aperture.

Complete *absence of the anus and the lower end of the rectal pouch* may be so marked that scarcely a dimple indicates the point where the anus should be found. In these cases the external sphincter may or may not be present, while the rectal pouch may present loosely in the pelvis, or be defective, or attached to some portion of the abdominal wall, the intervening space being filled with indifferent tissue. The fact that there appears to be a slight anal depression is to be taken for nothing more than an indication of what should be found, and signifies nothing regarding the deeper condition.

A somewhat mitigated expression of this last defect is seen when the anus is normal, with a more or less complete sphincter, but where a distinct partition separates this pouch from the rectum above. This, again, may vary considerably in thickness. If, then, fluctuation be detected the condition may prove less unfavorable for the little patient, since at this point communication may be easily established. Too often, however, this diaphragm is dense and tough.

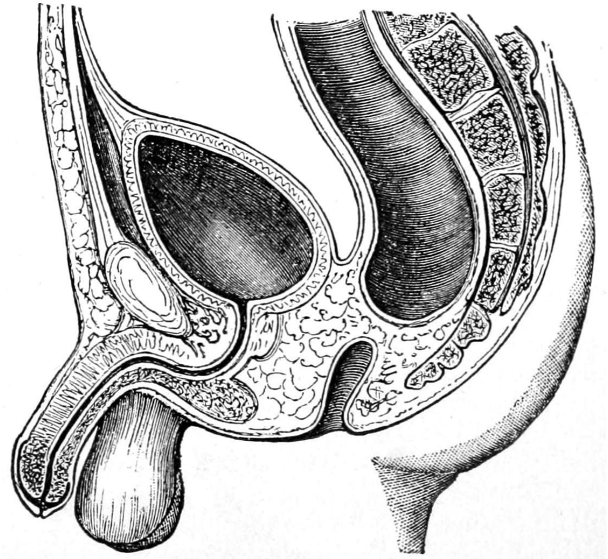
When successfully perforated, like the hymen, it may allow a slow dribbling of material, and will require constant attention and dilatation. Figs. 590 and 591 portray these conditions in some of their expressions.

Fig. 590



Rectum ending in a blind pouch. (Kelsey.)

Fig. 591



Rectum ending in pouch; anus normal. (Kelsey.)

The *anus* itself is by no means a fixed anatomical opening, and its position may vary considerably. It may be found anywhere along the middle line of the perineum or even in the sacral region.

Another variety of complication is, with the conditions represented as above, a practically imperforate anus or rectum which nevertheless opens into one of the *other pelvic cavities*—the vagina, the bladder, or the urethra. In female infants an opening into the vagina may be of a size sufficient to serve its purpose, even throughout life. This condition has occurred in ignorant women who became wives and mothers, and were never conscious of anything abnormal. When the rectum communicates with the urinary

passages meconium will escape with the urine. When the opening is in the urethra it is not so serious, and patients live to adult life, whereas when the bladder is thus involved the ureters will become infected and the patient eventually dies of a terminal infection of the kidney.

There is a somewhat reversed condition similar to this where the urinary passages connect with the rectum or with the colon.

Most of the anomalies above catalogued produce conditions of acute intestinal obstruction within the first two or three days of the newborn infant's life. The condition is perhaps first made known by the nurse's failing to note the presence of meconium upon the diapers. A suspicion of such a condition should prompt immediate investigation, which should be made with the little finger or with a soft catheter properly anointed; the finger making the best probe for purposes of orientation. The first thing is to determine the patulency of the anus. This established, the next procedure is a determination of the rectal condition and of possible communication with other passages. In this the presence of a small sound or metal catheter in the urethra and bladder may be of assistance. If a fluctuating sac presenting downward can be discovered in the location of the rectum its character may be assumed, and, after exploring with an ordinary aspirating needle, one may, if meconium be discovered, leave the needle *in situ* for a guide and with sharp scissors or pointed knife passed along it carefully cut into the sac, and then gradually enlarge the opening until it be given a sufficient size. The surgeon is fortunate in this respect who has a case of imperforate rectum so simple as to permit of doing this and finding it sufficient.

Every completely obstructed case becomes instantly a surgical one, whose outcome depends not on the operator alone, but on the actual anatomical condition. There is justification, therefore, in going to almost any extreme in the endeavor to open up a passage-way, for no danger can be greater than that of failing to establish it. After a careful search of the pelvis, aided by anesthesia and a metal instrument in the bladder, if no trace of large bowel can be found or if tissues be so dense as to completely mask the anatomical details, then as a last resort an artificial anus may be made in the left

inguinal region, if there be no reason for not violating the usual rule and opening the large bowel in the right groin. *Colostomy in an infant*, under these circumstances, is always a hazardous and serious matter, but it offers the only resource. It is made in exactly the same way as enterostomy described previously, and the operation requires no special description here. Very young infants thus affected make bad subjects, and operation should be performed as expeditiously as possible. Considering the danger of leakage it would be well if practicable to wait a few hours after attaching the intestine to the abdominal surface before opening it, in order that the peritoneal cavity may be more perfectly protected.

Even those cases where the rectum communicates with the urethra or bladder should have a natural anal opening. In cases where communication is into the vagina it may be proper to wait until youth or adult age is reached, when more may be accomplished.

INJURIES AND FOREIGN BODIES IN THE RECTUM.

The rectum may be the site of injuries of various kinds from both extrinsic and intrinsic causes. When weakened by disease it may be burst by accumulation and straining, or it may be the site of perforation of ulcer, just as may any other part of the intestine. Although well protected from most directions it may suffer from penetrating wounds, such as stab or gunshot. It is occasionally injured in fractures of the pelvis, and possibilities of such injuries should be excluded in such cases. It may also be lacerated during parturition. The sphincter and even the muscular tube itself sometimes suffer. It has been indifferently wounded or punctured in operations, especially for stone in the bladder and in prostatectomy.

In the absence of disease a laceration occurring in any of these ways may be repaired by prompt suture, although to make a suitable exposure may require an extensive removal of sacrum, or the performance of a laparotomy with the patient in the Trendelenburg position. The rectum is also frequently injured by accidental or intentional introduction of *foreign bodies from without*.

Museums, especially the foreign, are full of collections of foreign bodies which have been removed from the rectum, most of which have been placed there with intent, malicious or otherwise. They include objects of all imaginable character, shape, and size, some which are easily introduced and are also easily removed; others which have been passed inward under no small difficulties are removed only with a more or less formidable operation, or have even determined the death of the individual. The ignorant have peculiar superstitions, and the criminal most vicious tendencies, toward the insertion of such foreign bodies, and the complications that may be brought about are too numerous to be rehearsed here.

On the other hand, by actual accident serious injuries may be produced; as in one case under my observation where a boy of twelve fell, in the squatting position, over an iron picket nearly one inch in diameter in such a way as to permit it to pass into the anus, scarcely bruising the mucous membrane, yet entering the pelvis for nearly six inches, penetrating the anterior wall of the rectum, the posterior wall of the bladder, and bruising its anterior wall without perforating it. One feature of the accident was the carrying into the bladder of a piece of his trousers. In this case I opened the abdomen in order to be sure that there was no abdominal complication, closed the major part of the wound, and drew a good-sized drainage tube through from just above the pubes out through the anus, after removing the piece of cloth above mentioned. The boy made a perfect recovery.

The danger in all these cases is of infection, either of the bladder or of the pelvic cellular tissue. In the female similar perforating injuries may involve the vagina or the other female organs.

Some of these accidents or conditions above recounted take place during intoxication. The recurrence of tenesmus, pronounced rectal pain, the appearance of blood either at the anus or in the urine, should in every instance prompt a thorough investigation of the rectum, if necessary under an anesthetic.

PROCTITIS.

Under the term proctitis are comprised acute inflammations of the rectal mucosa, which are characterized by discharge of mucus, mucopus, and perhaps blood, and accompanied by more or less tenesmus, pain, and sphincteric spasm. The conditions which produce proctitis are those which lead to ulceration. It may be the result of a downward extension of trouble from above, as in mucocolitis, dysenteric, tuberculous or other forms of colitis, or it may be the result of infection from below (*e. g.*, gonorrheal). An inflamed rectum may be more or less easily exposed for study through some form of speculum (see above), and a more perfect picture of the actual condition thus presented to the eye than can be seen elsewhere, save in the mouth and pharynx, of the effects which serious and even ulcerative inflammation may produce in the way of congestion, swelling, bleeding, and actual breaking down.

Gonorrheal proctitis is not common, yet it may occur either by extension or by direct infection, and will be of an acute type. The other forms may vary in severity according to their cause and duration.

Symptoms.—The symptoms differ only in degree, and include the features already mentioned. There are soreness, tenderness, and often pain, especially when the lower part of the rectum, with its numerous sensory nerves, is involved, while reflex pains are referred to the sacrum and the lower part of the back. Sensation of local heat and of soreness is generally noted, while the patient is more or less tortured by frequent desire to evacuate the bowel, but passes perhaps a little bloody mucus with the accompaniment of tenesmus and straining. In acute cases the condition is an exceedingly painful one.

Treatment.—Treatment should be begun by a search for and removal of the cause. Relief is afforded by local anodynes, of which the hot sitz bath is one of the most comforting, and by hot rectal lavements of soothing antiseptic fluid, such as linseed tea, to which a little thiol or ichthyol has been added. These should be retained as long as possible, then ejected. Local anodynes may be furnished through the medium of suppositories containing opium, or preferably some of the milder local anesthetics, such as

orthoform. Cases which do not quickly yield to this form of treatment should be anesthetized in order that complete exposure of ulcerated areas and vigorous local treatment may be accomplished. A brushing of the entire surface with a 2 or 3 per cent. solution of silver nitrate will frequently be followed by relief, which will be further furnished by sufficient stretching of the sphincter to overcome its painful spasm. The diet should be so regulated as to leave a minimum of undigested residue that may irritate the lower bowel, and laxatives should be so administered that there shall be no coprostasis in the colon, but that whatever enters it shall be speedily extruded. The specific forms of proctitis require specific treatment, for which there is perhaps nothing better than the silver preparations, either the mild, like argyrol, or the active, like solutions of silver nitrate.

ULCERATION OF THE RECTUM.

The causes of the formation of ulcer in the rectum nowise differ from those of ulcer elsewhere about the body. They may be summarized as *catarrhal*, *i. e.*, more pronounced and local extensions of non-specific inflammation of the mucosa, which, in certain areas, assume more intense and later infective and degenerative form (in this way are formed the so-called catarrhal ulcers); *specific*, including primary chancre, which is rarely met with high up in the rectum, or the later expressions, varying from mere mucous patches which may abound both within the rectum and around the anus, to the deeper, more destructive, and usually tertiary ulcerations, with destruction of tissue, extensive involvement of surface and most pronounced tendency to subsequent cicatricial contraction when they begin to repair.

What has been said regarding syphilitic ulcer is true also of *chancroid*, which when found in this region involves most frequently the anus, but which may extend or even be seen as a primary lesion higher up.

Tuberculous ulcers are not infrequently primary, usually the accompaniment of advancing and ulcerative infection of the intestine above, or secondary, as frequently occurs when the more innocent

forms suffer a secondary tuberculous infection, becoming thus converted into lesions of pronounced type.

Typhoid ulcers in the rectum are rare, but those connected with *dysentery* are common, especially in localities where tropical or other forms of the disease prevail. The innocent tumors within the rectum, such as polypi and adenomas, etc., tend to break down because they are kept continually macerated and exposed to contamination. Even innocent hemorrhoidal tumors are extremely prone to suffer in this way because their epithelial covering is thin and they are exposed to both external and internal contamination. Finally every malignant tumor which grows into the rectum tends to break down, and sooner or later to present an ulcerating surface. The causes of rectal ulceration are then seen to be various. Nearly everyone of them may be an exaggeration of a condition first producing an acute proctitis.

Ulcers occupying the anal region are usually compressed into a linear form and present rather as cracks or linear abrasions. These are known as *fissures* and are spoken of as *fissures in ano* or *rectal fissures*, according to their situation. These fissures occupy the most sensitive portion, *i. e.*, the lower inch and a half of the rectum, and become in time irritable, erethistic lesions, whose sensibility is constantly enhanced by the reflex spasm of the sphincter which they produce. An essential part of the treatment of every such case is dilatation of the sphincter, as well as the destruction of the irritable surface, even the former alone often sufficing for the milder cases. Anal fissures, like corneal ulcers, give rise to exquisite pain and annoyance, and produce irritability and general distress. Their treatment is so simple that there is no excuse for allowing patients thus to suffer.

To a peculiar form of combined infiltration and ulceration involving the lower part of the rectum, the anus, and, in females, more or less of the vulva, the French have given the name *esthiomene*. It has been considered due to more or less mixed forms of infection, including those of chancroid, syphilis, tuberculosis, and other undescribed types. It is a mixed infection, and not necessarily of the same type in all cases. It is usually seen in old syphilitic subjects or

in prostitutes. It produces more or less deforming lesions, and sometimes such active and protuberant granulations as to cause it to be mistaken for epithelioma or condyloma. It is essentially chronic, and its most striking characteristic is the combination of ulcerative and hyperplastic processes which it presents. Clinically it is a chronic ulcer, with thickened and deformed base and with all the possible consequences or complications of ulcer in this region.

The other forms of ulcer above mentioned appear singly or multiply in any and every possible location, pronounced types presenting extreme pictures of an ulcerated, inflamed, partially destroyed tube, which needs only to be seen before recognizing the advisability of a colostomy for the purpose of rest of the inflamed surfaces.

Symptoms.—The symptoms of rectal ulceration are essentially those of proctitis, mild or severe as the case may be, with local pain, and escape of pus and blood. Much depends upon their location, *i. e.*, whether within the sensitive area or not. Ulcer low down in the rectum, no matter how produced, will always cause a disproportionate amount of suffering, because of the reflex sphincteric spasm which it produces. On the contrary, ulcers high up give rise to little or no suffering, and may be discovered only after a history of discharge of blood or pus prompts a thorough local examination. Therefore, without reference to the feature of *pain*, every statement that mucus, pus, or blood is discharged from the rectum should lead to an examination, sufficiently thorough to detect and expose the cause and permit of proper treatment. Should local anesthesia prove unavailing for this purpose a general anesthetic must be administered. Thus the non-specific, the syphilitic, and the tuberculous ulcers may be scraped and cauterized, care being taken not to perforate. If ulcerating tumor is found it should be operated upon at once. Sometimes, however, by these examinations unsuspected conditions are revealed such as to give the case a serious aspect. In this event a second anesthetic, with operation, will be necessary. For all ordinary purposes, however, sufficient specula, curettes, the actual cautery, and applicator, by

which suitable local treatment can be made to the affected surfaces, should be provided.

Treatment.—As indicated above in the treatment of proctitis there is need also for various local anodynes and soothing applications. Physiological rest for the inflamed bowel is imperative. Finally, in extreme cases, it has been shown that it is best to open the colon above the seat of the principal disturbance, doing this even on the right side should the whole large intestine be involved, and by thus relieving it of its duties enable more complete physiological rest and local treatment.

STRICTURE OF THE RECTUM.

The inevitable consequences of any of the serious forms of ulceration above described are, if recovery ensues, and usually even if it does not, the formation of cicatricial constrictions by which varying degrees of rectal stricture are produced. Rectal strictures, then, are to be grouped as:

1. Those due to previous and more or less active, morbid intrinsic processes;
2. Those due to the presence of organized exudate, tumors, or other compressing causes from without;
3. Those due to traumatism.

The *symptoms and signs of rectal stricture* include those of ulceration and obstruction, or difficulty in defecation. A history of alternating constipation and diarrhea, with perhaps tenesmus, and with discharge of pus or blood, will prove the presence of some obstruction. One characteristic feature met with in some strictures is the passage of stools which when solid or semisolid have a characteristic tape- or cord-like shape, as though extruded through a constricted passage-way. This is not a feature necessarily present, and may be produced even in non-malignant cases, as when the rectum is obstructed by uterine myomas.

With respect to any suspected rectal or colonic stricture it is necessary to determine: (1) Its existence; (2) its location; (3) its character; (4) any other circumstances bearing upon the case which

might affect the question of treatment. The latter is particularly important when the question of syphilis is raised.

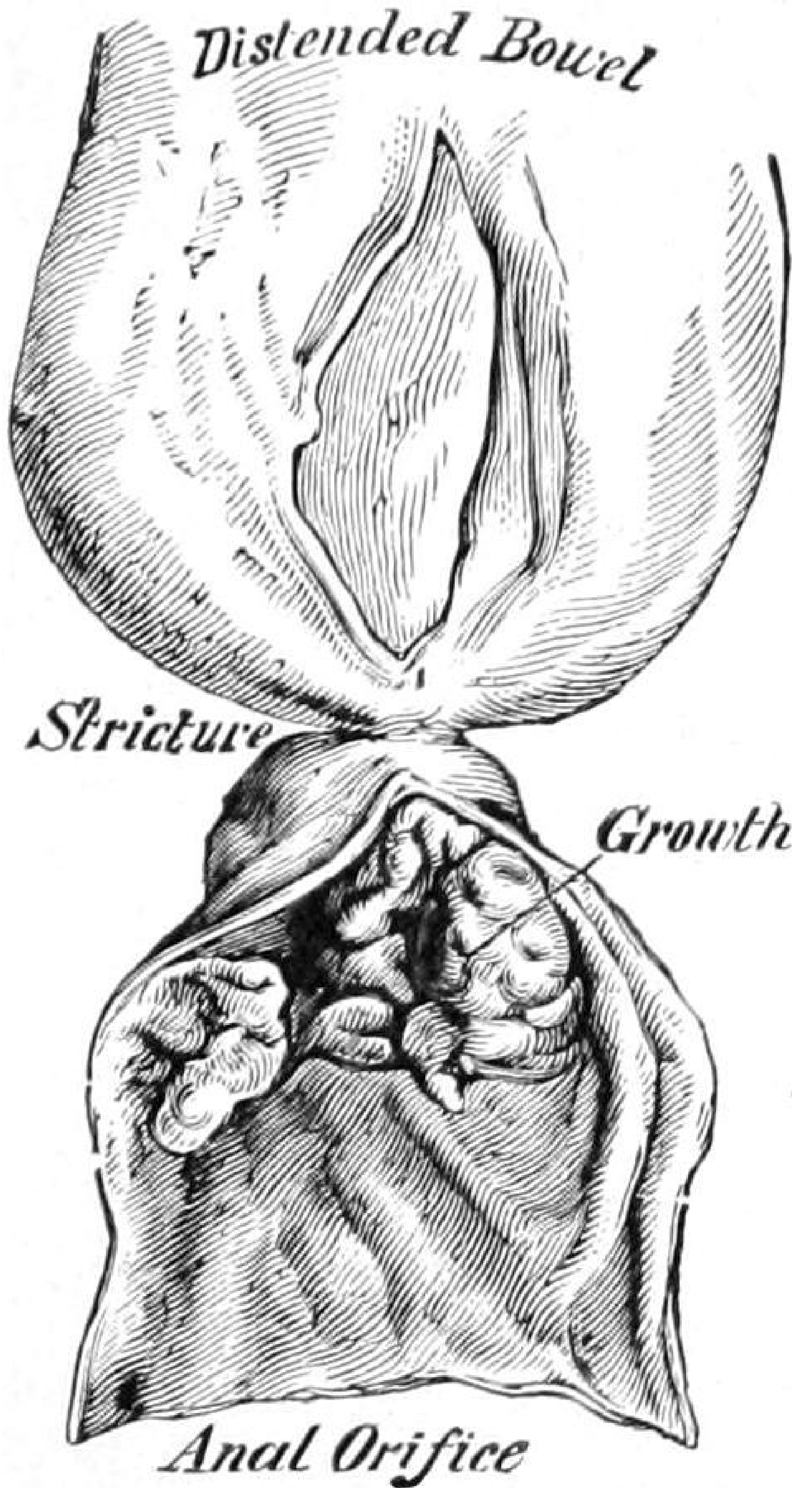
The above features are determined by careful physical examination for which the finger alone may be sufficient, or which may require instruments and postures already described.

Treatment.—Treatment of rectal strictures is necessarily mechanical, but will depend in large measure upon their cause and extent. Thus a stricture produced by conditions extrinsic to the rectum proper might require abdominal section and removal of a pelvic tumor or other similar operation. Many a patient with retroflexed uterus will complain of a rectal condition which is essentially one of stricture, the overturned uterine fundus being forced against the rectum and pressing upon it, demanding not a rectal operation but one for suspension of the uterus. The obstipation which is produced by ptosis of the sigmoid, or by hypertrophy and abnormal arrangement of the folds and rectal valves, may necessitate operation upon the colon (coloplication or colopexy) or a careful division of hypertrophied mucosa through the proctoscope, as used by one skilled in its manipulation.

Strictures of recent origin may yield to a forcible dilatation, which should, however, be systematically repeated in order to maintain the desired effect. Old, dense, and chronic strictures will require more radical procedures, according to their location and extent. Strictures practically impassable may indicate conditions so extreme as to necessitate colostomy, while in a small proportion of cases conditions will be found so favorable as to justify a resection of the rectum, either from below and from without, or through abdominal section with the patient in the Trendelenburg position. Nearly every stricture is accompanied by more or less ulceration, sometimes in extreme degree.

Dilatation or expansion by some mechanical method is the necessity in every case. Simple in theory its performance is often difficult because of density of the structures, and its danger often pronounced because of the serious surrounding conditions and the possibility of rupture or perforation of the bowel at some weakened part, or of infection and phlegmon following division of the stricture

Fig. 592



Stricture of rectum. (Bryant.)

and exposure of fresh, raw surfaces. Various instruments have been devised for dilating rectal strictures, some of which are ingeniously arranged to be used at a considerable height above the anus. Danger attaches to their use in proportion to the amount of force employed and its distance from sight and touch, *i. e.*, from intelligent means of control. The best method is that which permits of exposure through the speculum and more accurate division with knife, scissors, or actual cautery, the latter often being preferable, as hemorrhage is less after its use.

It should be remembered that "once a stricture always a stricture," and that the tendency of cicatricial tissue to

contract is continuous and never ceasing, and that wherever there has been a stricture (and this is true of any tubular portion of the body) there is necessity for constant and more or less frequent later attention. If possible, then, milder methods and those more capable of repetition should be adopted. The best of these is the use of the finger for cases within reach of it, and of the soft-rubber, conical bougies for those placed higher, and for the patient's individual use. Dilatations should be gradual and increased as rapidly as circumstances permit, and with tight strictures the endeavor should be with each sitting to make some gain until a sufficient size has been attained. Local anesthesia may be required, and is justifiable when needed.

PRURITUS ANI.

This condition, usually accompanied with irritative or ulcerative conditions of the lower end of the rectum, the verge of the anus, and the surrounding skin, is one of intense itching, leading to an uncontrollable desire to rub or scratch, by which temporary relief may be afforded, but which tends to produce excoriation and ulceration. The condition is not primary, but secondary to something else, although the conditions which produce it are widely variant, ranging from the neuroses due to anemia or other causes, to the toxemias of uric acid origin, the local irritations produced by lesser degrees of internal disturbance, or eczema or other itching eruptions on the outside. In corpulent persons eczema and intertrigo from friction are common, and these, combined with irregular tags of skin or remains of old piles, permit of irritation and maceration which still further complicate. Annoyance is usually greatest at night, when the attention is less distracted by other things.

Treatment.—The treatment should consist in removal of the cause and local relief. The former may be difficult and require prolonged effort. Local relief may be afforded by frequent applications of water as hot as can be borne, with local application, after the parts are thoroughly dried, of a powder containing menthol, a solution containing camphophenique, with the addition of

a little chloroform, or by soothing ointments containing carbolic acid, menthol, and orthoform. When there is abrasion of the skin applications of silver nitrate, in 5 per cent. solution, may be made; but when there is multiple ulceration, stretching the sphincter and thoroughly cauterizing or excising the ulcerated surfaces will be more radical and effective.

PHLEGMONOUS AFFECTIONS OF THE RECTUM.

On either side of the rectum, between the dividing folds of the deep pelvic fascia, is situated the *ischiorectal fossa*, a pyramidal-shaped cavity filled with fat and cellular tissue. This is not only in close relation with the outer rectal surfaces, but is peculiarly liable to infection and acute inflammatory disturbance. Thus it happens that *ischiorectal* or *perirectal abscesses* are of frequent occurrence, often of marked violence, and not without their peculiar dangers. Infection may travel from the rectum, or the first excitement may occur in one of the mucous or skin follicles at or near the anus. The consequence is what the patient ordinarily calls a *boil*, which to the surgeon is a phlegmon, first limited by the walls of the cavity within which it rises. So long as the phlegmonous process be confined within these walls it is acutely painful.

The *local signs* of such an abscess are redness and infiltration of the exterior surface, swelling, which becomes quite distinct, and pain and tenderness, of which the patient may complain bitterly. The local soreness is so extreme that defecation becomes difficult or almost impossible. Any attempt at digital examination of the rectum will give rise to extreme pain.

Treatment.—Could every perirectal abscess be distinctly recognized and properly treated in its comparatively early and localized stage there would be few cases of residual trouble. This treatment consists of early and extensive incision, made externally and directed to the centre of the phlegmonous mass, sufficiently *deeply* also to reach it. The evacuation of even a small amount of pus, followed by more or less blood, will give prompt and immediate relief, and bleeding may be encouraged

rather than checked for purposes of local depletion. Such incision may be in most instances made with freezing spray or local anesthesia. In children and exceedingly nervous patients it would be better done under general anesthesia, in order that it be done thoroughly. It is in patients who decline such early relief, or who, from ignorance or inattention have not received it, that ischiorectal abscesses sometimes assume serious proportions and become extensive phlegmons, breaking down anatomical partitions in the pelvis, burrowing extensively in various directions, since there is considerable fatty and cellular tissue both inside and outside of the pelvis in this region. Thus the surgeon may not see such a case until the entire buttock is involved, or until the process has gone perhaps even farther. Relief now must come from radical application of the same principles, by the aid of general anesthesia, multiple incisions with counteropenings, use of drainage tubes, etc. The patient now is fortunate if perforation into the rectum has not already occurred so that no pus is discharged from the bowel. If this has not yet happened it will probably be prevented by the above measures; but when it has, and a fistulous communication has already been established, it may be sufficient to thoroughly cleanse the infected cavity to see both it and the fistula close by granulation in the course of time. Wide external incisions are necessary in these cases, for complete access to the deep fossæ must be made. In more pronounced cases the pus evacuated will be extremely offensive, and there will be found masses of necrotic tissue, sloughs of fascia, and evidence of extensive local gangrene. Such putrid cavities must be thoroughly cleaned out, and will then be found to quickly resume a healthy aspect when treated by packing with gauze saturated in brewers' yeast.

The more chronic and slower expressions of this condition are usually connected with local *tuberculous* disease. In fact every *phlegmon which has passed the acute stage is favorably situated for tuberculous infection*, and becomes in time a tuberculous lesion, which is to be treated on the general principles elsewhere enunciated. These fistulas are often seen in consumptive patients, and apprehension has widely prevailed that the pulmonary disease

might be aggravated by radical attention to the fistula. This was only when such attention was made incomplete. To divide the fistulous passage and leave its raw surfaces unprotected and in contact with tuberculous tissue is to invite the spread of infection. To do the proper thing, on the other hand, *i. e.*, to radically dispose of all tuberculous tissue and so treat both fresh and old surfaces that a new infection is not invited, is not to make a patient worse in any respect, but to relieve him of at least one focus of disease. There is, therefore, no reason why rectal fistulas should not be radically treated even when they occur in consumptive patients.

RECTAL FISTULAS.

Rectal fistulas are always the consequence of ischiorectal abscesses left to open spontaneously in either or both directions. They may occur also without the preëxistence of a distinct phlegmon, as, for instance, when a small ulcer in the rectum gives way and permits the gradual extension into the perirectal tissues of a mildly ulcerative or suppurative process.

Rectal or anal fistulas are classified as *blind external*, *blind internal*, or *complete*, according as they open and discharge themselves or show a complete passage-way from the rectum to the exterior. They may be small and single, or numerous and extensive. Old and especially chronic tuberculous cases are seen when the whole gluteal region is honeycombed and perforated by numerous fistulas, some of which probably connect with the interior of the bowel. I have seen such openings as low as the knee and as high as the dorsal spines, as the result of extremely insidious advance of tuberculous granulation and its subsequent breaking down. In such cases a history of an acute phlegmon occurring years previously may be obtained.

A *blind external fistula*, simple or complicated, naturally discharges its pus upon the exterior. It may be accompanied by little or no local tenderness or pain. A *blind internal fistula* makes itself known by a certain amount of rectal tenderness and by the discharge of pus with the stool, or at other times of pus which may possibly be blood-

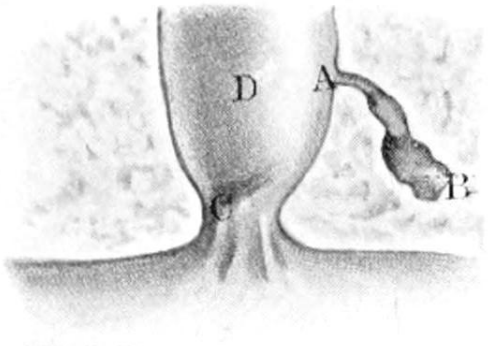
stained. Here there may be a history of old trouble, with external evidences of it, which suggests that exterior communication has been shut off while that with the bowel remains. In *complete fistulas* there is discharge not only of purulent material, but of more or less of that which is distinctly fecal, while gas sometimes escapes through them. Such a statement made by a patient is of itself significant. A fistulous passage may be surrounded by more or less infiltrated and inflamed tissue, or it may appear much like a duct. While always causing more or less annoyance, it may produce symptoms which seriously disturb. (See Plate LIII.)

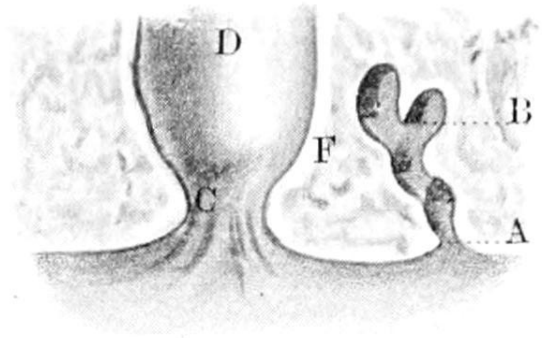
Treatment.—The treatment of rectal fistula in any of its forms is distinctly surgical and should always be radical. A blind internal fistula can be discovered only with the speculum.

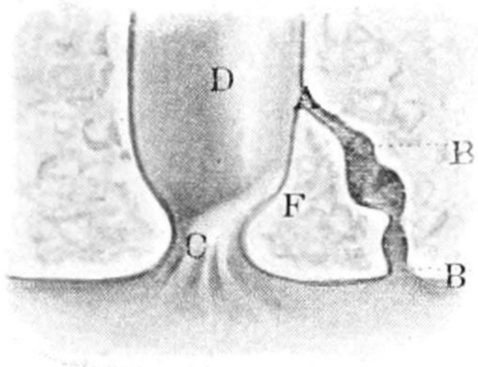
Every such fistulous passage should be split up and its tubular portion thoroughly excised or destroyed with a sharp spoon or caustic. Furthermore it should be followed to its ultimate ramifications. For this purpose it is of great assistance to first inject it with methyl-blue solution, or something else which shall stain it and make it recognizable wherever it may extend. To incise a superficial and external fistula is a simple matter, for which local anesthesia alone may suffice; but to deal radically with an extensive fistulous tract requires dilatation of the anal sphincter and such thorough investigation, with complete relaxation of the patient, that general anesthesia is needed. Now with a probe identifying the tract, and the knife and spoon made to follow it, or by identification of the stained tissues colored as above mentioned, the surgeon should proceed to the extreme of every morbid passage-way, dilating, cutting, trimming, scraping, as may be needed; while after the work is done every particle of disturbed raw surface should be cauterized with some reliable caustic (such as pure carbolic followed by alcohol) so as to sear the surface and prevent the possibility of reinfection.

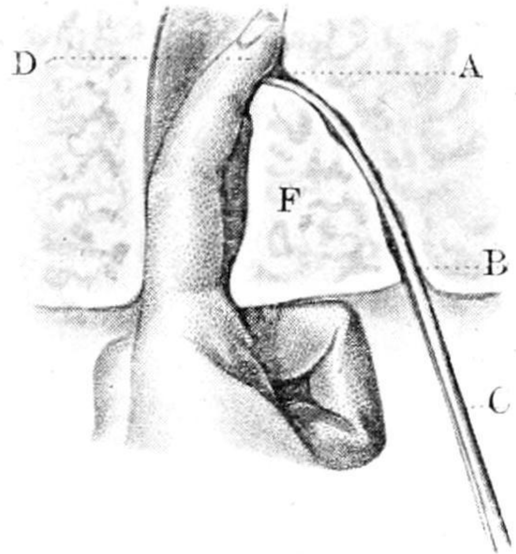
To do this operation thoroughly necessitates sometimes multiple and extensive incisions, with a fierceness of action which may cause surprise. It is, however, the only effective way in which to proceed.

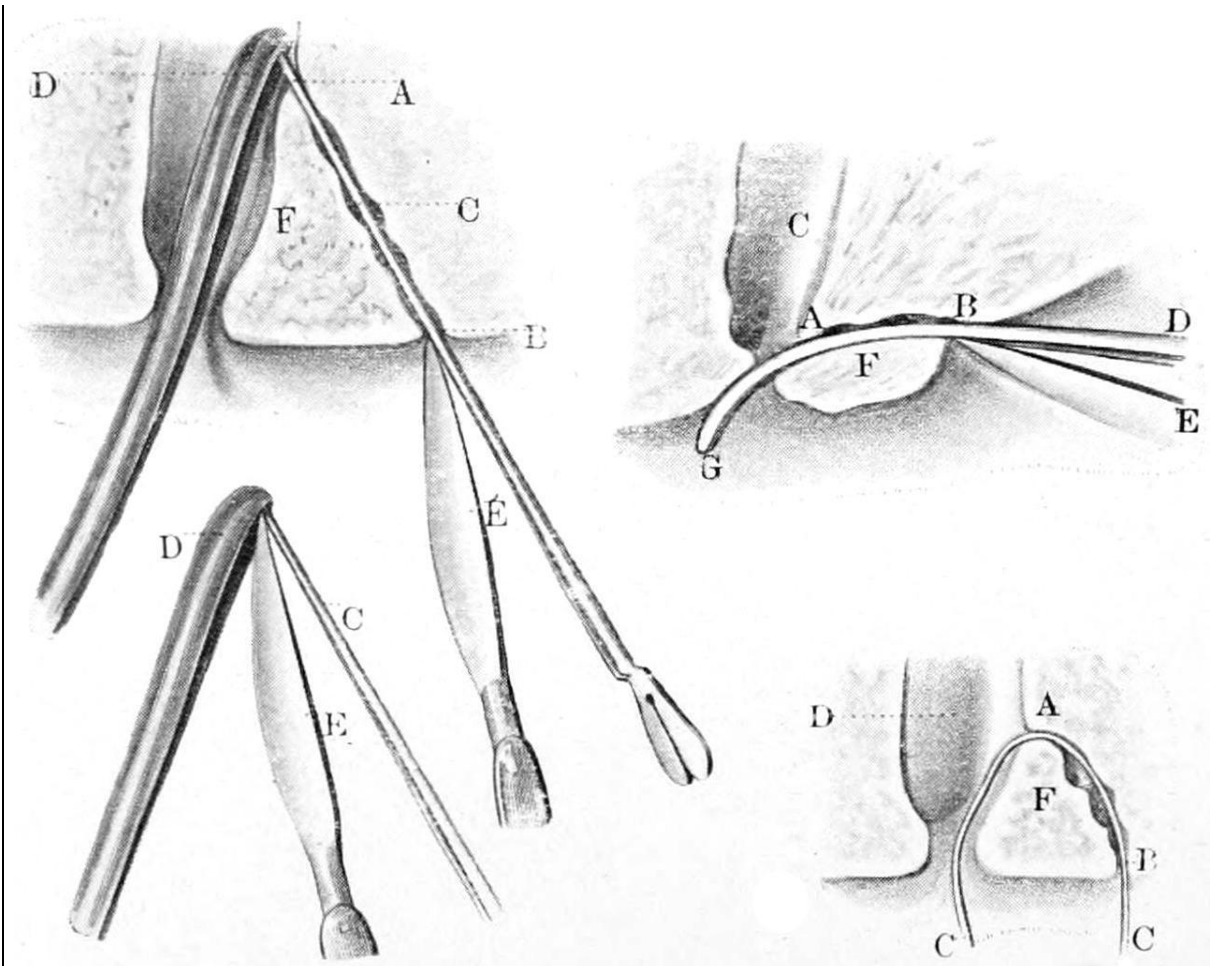
PLATE LIII











Illustrating Various Forms of Rectal and Anal Fistulas, and the Conventional Methods of Dealing with Them. (Bernard and Huette.)

One source of doubt and disappointment is met occasionally in the radical treatment which requires division of the sphincter, for to completely divide this muscle is to practically paralyze it and leave the patient thereafter with fecal incontinence more or less marked. Such accidents leave more or less disabling consequences. Usually they are avoidable, for it is rarely necessary to cut completely through a sphincter muscle, it being possible to avoid the necessity by partial division, with perhaps more complete exposure above and

below. Even in those instances where it seems unavoidable if the muscle be first vigorously stretched, and thus temporarily paralyzed, it may then be safely divided, provided it be neatly and completely sutured *at once*, and the parts kept at rest for a few days, the intent in stretching the muscle being partly to so weaken it that it shall be temporarily disabled. It was suggested years ago by Jenks, of Detroit, and later by Kelly and others, to make a complete excision of the entire fistulous tract and then to treat this as any other fresh wound, closing it completely with sutures. The method is good in theory and occasionally applicable, and should not be neglected when circumstances favor its practice.

Every fistulous tract, simple or complicated, not promptly and neatly closed, should be dressed with gauze, with or without yeast, balsam, or some one of the other local applications recommended elsewhere in this work.

PROLAPSE, PROCIDENTIA, AND INVAGINATION OF THE RECTUM.

Prolapse of the rectum is observed in two degrees, either as a mere *eversion of its mucosa*, which, however, may be profuse and extreme, or as an actual *escape by process of invagination* through the anus of some portion of the rectal tube, with all its coats, including in well-marked cases even its peritoneal covering. The former is more common in children as the result of diarrhea, colitis, the presence of pin-worms, or other parasites, or any other cause which produces tenesmus and frequent straining, with consequent relaxation of the anal sphincter. It is amenable to treatment and is usually of insignificant proportion. It is also frequently seen in adults in connection with internal hemorrhoids, which are extruded with every stool, carrying with them more or less mucosa, and which are usually returned within the rectum by the patient at the conclusion of the act of defecation.

The more complete form of prolapse by true *invagination* is rarely seen, save in adults, and in consequence of some serious preëxistent condition, such perhaps as complete laceration of the

perineum in the female, paralysis of the sphincter from previous accident, or from the existence of spinal-cord disease. Here and in extreme cases several inches of bowel may be extruded from the anus, and to an extent scarcely permitting spontaneous or even individual restoration. So complete a form is permitted only by some previous lesion of the pelvic floor, while the mesorectum and even the mesosigmoid become gradually stretched and useless. The lower portion of the rectum is by far the more muscular, and such a condition requires that its intrinsic muscles yield also with those around them.

Prolapse is a condition of general and usually slow development rather than of abrupt onset. It is made known by the presentation at the anus of the bright-red mucosa of the rectum, where it pouts and protrudes, forming a tumor of varying size, with more or less tender surface, which, with gentle coaxing pressure, is easily made to return within the rectum. It can usually be made to appear by straining effort on the part of the patient. Boys with phimosis, who are in consequence made to strain every time they urinate, will frequently present minor degrees of the condition, perhaps oftener than when the rectum itself is at fault, as the act is so frequently repeated. The oftener such protrusion occurs the more relaxed becomes the anus and the more irritated the presenting surface, until ulceration and even keratosis may result. Chronic constipation of children or adults will also produce the same effect. The presence of hemorrhoidal tumors or of polypi, or even of parasites, causes the same result.

The most pronounced and complete types of invagination produce a condition in which reduction is perhaps not possible and procidentia is constant. There may form here a pouch around the rectum, containing loops of bowel, bladder, or ovary, or there may even occur a perirectal hernia.

While patients nearly always become more or less accustomed to the condition it nevertheless is distressing in proportion to its size and the individual’s temperament.

Treatment.—Treatment depends entirely upon the nature and extent of the condition. Mild forms occurring in young

children may be easily obviated by attention to their stools, by circumcision if needed, or by the use of a five-grain capsule of ergotin inserted as a suppository, it having the effect of invigorating the involuntary muscle and stimulating the sphincter. Cases not amenable to the milder methods become surgical and the treatment is then apportioned to the extent of the lesion. If connected with hemorrhoids or other tumors it becomes a part of their treatment and is to be dealt with at the same time. Occurring apparently independently the milder forms will often yield to the proper use of caustics. The actual cautery being preferable, it is applied in streaks up and around the rectum, in such a way that, when the ulcers thus formed cicatrize, the rectum shall be shortened by cicatricial contraction as by a series of loops drawn up to shorten it. When permitted by rupture of the perineum and more or less combined perhaps with cystocele, repair of the perineum, rather than attention to the rectal condition itself, will be demanded, while the latter may be combined with an operation for rectocele by excision of an elliptical portion of the vaginal mucosa and the approximation of its edges into a line of sutures. This will reduce the capacity of both the vagina and the rectum and a double indication be thus met. Acute inflammation sometimes follows exposure of a prolapsed rectum and it may slough, thus leading to spontaneous recovery, the process not being without its dangers of thrombosis and septic infection. This procedure may be imitated by a surgical excision of the entire prolapsed portion, always with great caution so that if peritoneal surfaces be exposed they be protected from infection. It has been possible in many instances to completely excise the protruding portion, and then to apply a double row of sutures similar to those used in intestinal resection, only with attention first to the peritoneal rather than the mucous surface, in such a way as to excise several inches of the prolapsed bowel and thus meet the indication. Nevertheless cases where this can be done are exceptional.

Pratt has suggested a *temporary* purse-string suture of the anus, effected by a curved needle, completely circumscribing the anal opening, but kept between the skin and the mucous membrane, to be brought out through the same puncture at which it was inserted.

The finger of an assistant being passed into the anus, the suture is now tied around it. This may be used as supplementary to linear cauterization above mentioned.

Numerous methods of *proctopexy*, or elevation and fixation, have been devised. Fowler, for instance, made an incision half-way between the anus and the point of the coccyx, and after separating the rectum from the latter and the sacrum inserted two fingers in the rectum, holding it up while its posterior wall was forced into the external wound and there held by heavy sutures of kangaroo tendon. By further incision he brought out the ends of these sutures on each side of the coccyx and tied them across the bone, thus by traction bringing the rectum up into position.

Colopexy has been practised as a more radical measure for the same purpose. As advised by Bryant the abdomen is opened by an incision parallel to Poupart's ligament on the left side and one inch above it, and the prolapse is reduced by firmly pulling the rectum upward. It is then secured to the peritoneum about it, and is held by quilting sutures, which include the entire muscular coat of the bowel. Save in exceptionally favorable cases one or the other of these methods may be considered preferable to the complete amputation above described.

HEMORRHOIDS; PILES.

Hemorrhoids constitute perhaps the most common and, in some respects, uncomfortable or distressing disease of the rectum. The term implies a varicose condition of the lower veins, sometimes those of one set of hemorrhoidal veins being involved, at other times nearly all of them participating. They are spoken of as *external* or *internal*. In the former case it is the external hemorrhoidal veins alone which are involved, and usually only two or three of them, although occasionally one sees outside the anus, as within, a general involvement of the entire venous distribution. A *pile*, then, is essentially a venous angioma, or a single varicosity, and its peculiar features are due solely to its location.

Any vein thus involved is liable to the same dangers and accidents as veins in other parts of the body. Thus it may undergo dilatation, thrombosis, and suppuration, while the ordinary consequences of the latter condition may follow here, as elsewhere, with this difference alone, that when the middle and upper hemorrhoidal plexuses are involved the thromboseptic process, should it occur, follows the *portal vein*, and the first metastatic abscess that forms occurs *within the liver*. Thence it may spread to other parts of the body in classic form.

The hemorrhoidal veins, save those at the verge of the anus, are more or less entangled among the fibers of the levator ani and the sphincter. These muscles are thrown into a condition of more or less spasmodic contraction when the veins are so involved. In consequence more pressure is made upon the veins themselves, and the conditions of spasm and venous engorgement react upon each other in a vicious circle, each tending to make the other worse. Hence the great advantage of *stretching the sphincter* in any operation save that for a small external pile.

Hemorrhoidal angiomas may appear as single tumors or in multiple form surrounding the lower part of the rectum. The most common cause for their occurrence is chronic constipation. Occasionally the first exciting agent is some violent strain in defecation, or possibly the actual rupture of a small vessel, but such constant overloading of the rectum as obstructs its return circulation conduces to engorgement and the other conditions may easily follow. A small pile may be brought into existence in brief time, but a general hemorrhoidal condition is one of slow development. Chronic cases are always accompanied by further changes involving the surrounding connective tissue and the overlying mucosa, both of which become thickened and infiltrated, while ulcers form frequently upon the latter, and the occurrence of those linear ulcers which are ordinarily called *fissures* is very frequent. This gives an additionally distressing feature to these cases. As the condition goes on and the angiomas increase in size there is an increasing tendency to prolapse. This may be temporary or constant, *i. e.*, it may occur with the straining effort at stool or it may result in a condition of

permanent protrusion at the anus of the engorged mucosa; or, if the sphincter has finally become prolapsed a true prolapse of the rectum may result. A mucous surface thus constantly exposed to irritation will nearly always be more or less ulcerated and tender, while hemorrhages in either variety are common. It is not an infrequent event, then, for a patient to lose a number of ounces of blood with or just after stool, and sometimes the blood loss is even excessive. There is then added to the local condition a secondary feature of anemia and its attendant consequences which are sometimes extreme, and may even make operation somewhat hazardous. The lower inch and a half of the rectum is the portion particularly supplied with sensory nerves, and, under these circumstances, the irritated area becomes erethistic and painful and the patient's suffering may be extreme. This is the so-called "*pile-bearing area*," as it is within it that the hemorrhoidal condition is practically confined. Even a small individual pile connected with one of the little external veins may give rise to a disproportionate amount of discomfort.

There has been so much quack literature upon this general subject that ignorant patients are very likely to say that they have piles, no matter what may be the local condition. A statement to this effect should, first of all, provoke a physical examination with the finger, then with the speculum. The educated finger will easily detect the presence of the rugosities or tumors produced by internal piles, the external being always self-evident. The coexistence of ulceration will be indicated by an extreme degree of sphincteric spasm and of tenderness. It should be remembered that, along with hemorrhoids, there may coexist fissure, ulcer, painful spasm, prolapse, and, in long-existent cases, even cancer. The average patient with cancer of the rectum will go to his physician saying that he thinks he has piles.

Treatment.—Treatment needs to be something more than merely local in aggravated cases, as it should also be more comprehensive. Patients who have thus long suffered have almost inevitably contracted the constipated habit, postponing defecation whenever possible because of pain and tenderness, and perhaps the hemorrhage accompanying it. The large bowel has, therefore,

become weakened, and attention should be given to it as well as to the general digestive process.

Locally very mild degrees of purely temporary disturbance may be sometimes acceptably and temporarily treated by the use of suppositories containing some soothing and anodyne drug, as well as ergotin, the latter being valuable because of its constringent effect upon the bloodvessels. A five-grain gelatin-coated pill of ergotin makes a satisfactory suppository for the young, under these conditions.

A freshly formed, external hemorrhoid, which may attain a size no larger than that of a pea, but which will seem to the patient as large as a bird's egg, is best treated by *open division*, turning out the blood or clot contained within the dilated vein, which will quickly obliterate, so that recovery will be complete within two or three days. This may be done under local anesthesia and with prompt relief. There have been methods in vogue, especially among the charlatans and some of the specialists, of treating external and the more localized internal conditions by *injection of carbolic acid*, either pure or reduced with a little glycerin. A few drops are thrown into the tumor with a hypodermic needle, the effect being to promptly coagulate the contained blood, the intent being to produce a final cure by absorption of the clot and obliteration of the veins. This, in fact, is the secret method long employed by the travelling charlatans and often connected with the name of Brinkerhof. It is uncertain in action, and the production of a clot under these conditions is by no means always free from danger, nor is the relief prompt. What is desired is to empty the vein and turn out the clot rather than to provoke its production. The method is rarely practised by judicious surgeons, who have too often seen serious sloughing and even general septic disturbance follow it.

For the *radical relief* of distinctly hemorrhoidal conditions there is no satisfactory method save the operative. So many measures have been devised in time past that it is necessary here to be selective and only mention one or two. On general principles every pile is a venous tumor, and there is no reason why it should not be treated like any other tumor, *i. e.*, by *enucleation or excision*. The same is