Epithelioma = overgrowth of epithelial element
Carcinoma = overgrowth of epithelial & connective tissue elements.

Sarcoma = overgrowth of the connective tissue element alone.

MALIGNANT DISEASES OF THE FEMALE GENITALIA.

The term "malignant" is applied to those affections of the female genital organs which progress toward a fatal termination and have a tendency to return after removal. They are attended with a characteristic rapid involvement of the surrounding tissues and a marked general infection, as is evidenced by cachexia, debility, and the metastatic involvement of the internal organs.

At first these diseases are local, and if early recognition be followed by immediate removal, a perfect cure may in many cases be expected. After attaining a considerable size and involving the inguinal or post-peritoneal lymphatic glands their removal is simply palliative.

The malignant diseases to which the female organs of generation are subject are, in the order of their frequency, carcinoma, epithelioma, and sarcoma. Occasionally a mixture of carcinoma with sarcoma is observed.

Malignant Diseases of the External Genitals.

Carcinomatous tumors are frequently observed in women in the organs of generation, but malignant tumors of the external genitals are more rarely met with.

The forms of malignant tumors of the external genitals, in the order of their frequency, are, epithelioma, carcinoma, and sarcoma.

Epithelioma develops usually on the lower part of the inner surface of the greater labium in the form of small, round, hard nodules which project above the level of the mucous membrane and have a rough, uneven surface. They are usually of a whitish color, and may remain for a long time unnoticed. They grow slowly in their incipiency and are painless. Sooner or later the vascular supply to the tissues is increased, and the growth becomes more rapid, the

superficial epithelial layer is lost, ulceration begins and spreads to the surrounding tissues, and the original seat of disease progressively increases in area. The rounded form of the original nodule is preserved for a long time by the even extension of the induration. The ulcers are surrounded by hard, raised margins of a bluish-red color, covered with rough granulations, and bathed in a purulent ichorous secretion with unpleasant odor. The ulcers, later in the course of the disease, may become the seat of papillary excrescences which at times attain a large size.

As soon as the purulent sore is formed the induration spreads more rapidly, and usually in the direction of the long axis of the greater labium, and upon its inner surface. It is exceptional for it to extend beyond the myrtiform caruncles or to the abdominal wall.

In the course of its growth the epithelial cancer usually first involves the lesser labium, then the prepuce of the clitoris and the clitoris itself. These parts redden, become swollen and indurated, and then ulcerate, forming a long indurated ulcer of a dirty-red color, with irregular edges, extending from the lower part of the greater labium to the mons Veneris. It is rare for the disease to spread to the labium of the opposite side.

The inguinal glands do not become infiltrated until the ulcerated sore has existed for a long time. When this occurs the disease rapidly attacks the deeper tissues which up to this time have not shared in the involvement. The entire labium assumes a dark-red color and becomes swollen, hard, and painful. The epithelial sore advances to the perineum and the thigh, forming a deep ulcer with an irregular surface. One or more of the inguinal glands may harden, take on a rapid growth, ulcerate through the skin, and form a sore extending deeply into the tissues.

The ETIOLOGY of epithelioma is but little known. It occurs only in the later years of life, and most frequently about the time of the menopause. Heredity appears to have no influence in its occurrence. While it usually has its seat on one side of the vulva, it has been observed primarily on both labia. Blows and falls upon the labia have been referred to as causes, but it is difficult to decide what causal relations, if any, they hold to the disease. The pruritus which always accompanies epithelioma of the vulva, and is most violent in the beginning, has been by some authorities considered not a symptom of that disease; they contend that the epithelioma is a result of the continuous rubbing and scratching of the parts for the

relief of the pruritus. This theory, however, has gained few converts, and is most probably not the correct one.

Epitheliomatous nodules may exist for months without producing symptoms other than obstinate pruritus, or materially changing their form or size. As soon as ulceration begins the process becomes rapid, and usually causes death in two years. There is persistent pain, which is not so severe as in other forms of cancer. The patients suffer from insomnia, are wasted, and gradually acquire an earthy complexion. The appetite is almost completely lost. The secretions from the ulcerated surfaces are not so copious or so offensive as those from cancer. Hemorrhages may occur, but are not common. The loss of flesh and strength progresses rapidly, and the patients die, usually in about two years, from chronic septic infection.

The TREATMENT of epithelioma of the vulva consists in its early excision, including enough healthy surrounding tissue to ensure its complete removal. The use of caustics, at any stage of the disease, for the removal of the growths, cannot too emphatically be denounced as unscientific and untrustworthy, increasing the sufferings of the patients and giving them no assurance of complete removal. The use of caustics is nearly always followed by a quick return of the disease, whereas if the growth be early and freely excised, before there is involvement of the inguinal lymphatics, the chances for a perfect cure are, in some cases, fair. Even where glandular enlargement of the inguinal lymphatics is present, excision of the growth and removal of the chain of glands will most probably prolong the life and will certainly relieve the sufferings of the patient. If the infiltration has spread over the perineum and on to the thighs, or if the inguinal lymphatics have ulcerated, the treatment should be, naturally, palliative. For these advanced cases the use of compresses wet with a saturated solution of chlorate of potash has been recommended.

Scirrhous carcinoma, sarcoma, and *medullary sarcoma of the vulva* as primary growths are extremely rare. The point of origin of these tumors is usually the greater labium. Scirrhous carcinoma has been observed in the clitoris and in the tissues adjoining the clitoris. Sarcomatous growths may originate in the nymphæ. Medullary sarcoma has been observed to grow from urethral caruncle.

The growth usually develops as a deeply-seated nodule, which rapidly spreads toward the skin surface. The overlying skin be-

comes adherent and ulcerates, forming an irregular, uneven sore, secreting a copious purulent, ichorous discharge. It is a disease essentially of old age, occurring usually between the sixtieth and seventieth years.

The SYMPTOMS are much more violent than those of epithelioma. In the early stages there are pruritus, increased vaginal secretion, and the mechanical inconveniences of the tumor according to its situation. The pricking, tearing carcinomatous pains occur early. The purulent ichorous discharges are profuse. Copious, weakening hemorrhages frequently occur. The inguinal lymphatics are early involved. The patients, as a rule, rapidly decline in health, and soon die through progressive loss of strength and metastasis to the internal organs.

If the case is seen before extensive involvement of the inguinal lymphatics has taken place, the growth should be excised freely with the knife or removed with the Paquelin cautery. The operator should remove all doubtful parts, without fear of a too great loss of tissue. Unfortunately, most of these cases come under the gynecologist's notice when wide extension of the growth and the involvement of the lymphatics render the treatment only palliative and symptomatic. These cases then require the use of antiseptic and disinfectant washes to correct the fetor of the discharges, alum and Monsel's solution to control the hemorrhages, and the plentiful use of opium to render the patients' last days as comfortable as possible.

Carcinoma of the urethra is a very rare disease, and usually secondary to cancer of the external genitals or vagina. Carcinoma of the bladder rarely involves the urethra.

The TREATMENT consists in excision. If removal of the mass is not possible, the urethral canal should be kept open by the daily passage of the catheter. Should the growth become too extensive for this, an artificial vesico-vaginal fistula should be made to provide for the escape of the urine. Local cleanliness and anodynes for the relief of the pain are mainly to be relied upon when the disease has progressed too far for surgical relief.

Periurethral cancer develops in the form of nodules in the vestibule of the vulva near the urethral orifice, or in the cellular tissue along the sides of the urethra without involving its walls. The mouth of the urethra is usually secondarily involved. The nodules are at first hard, non-ulcerated, painful upon pressure, and occasionally the seat of lancinating pain. The pain usually first causes

their discovery. At times they are not observed until ulceration has occurred and hemorrhage invites search for its cause. The nodules rapidly infiltrate the surrounding tissues, filling the whole vestibule, following the course of the urethra to the neck of the bladder and to the pelvic fascia, and finally extending over the symphysis and descending rami of the pubis, and involving all of the included tissue.

The treatment is operative if early seen—palliative if there is extensive involvement.

Malignant Disease of the Vagina.

The vagina may be the seat of carcinoma, epithelioma, or sarcoma. The carcinomatous and epitheliomatous affections are usually secondary, while the sarcomatous are principally primary growths.

Sarcoma of the vagina appears either in the form of a circumscribed rounded tumor growing from the submucous tissue or as a diffuse superficial degeneration of the vaginal wall. Tumors of the first variety may readily be confounded with fibro-myoma, and the second form may be mistaken for carcinoma. The growth may occur as a small warty tumor, or as a rounded or oval nodule which may reach the size of a goose-egg. The usual seat of sarcoma of the vagina is upon the posterior wall. The circumscribed submucous sarcomata are usually composed of spindle-cells; they ulcerate late in their course, and occasion symptoms analogous to those of the fibro-myomatous tumors of the vagina. There is pain, especially at night, obstruction of the vaginal canal, and hemorrhage after ulceration has taken place.

The superficial sarcomatous degeneration of the vaginal wall occurs, usually upon the posterior wall as a small tumor, which slowly increases in size and resists treatment. Finally, it loses its mucous covering, and forms an ulcer with elevated edges and covered with readily bleeding granulations. Involvement of the inguinal glands does not take place until late in the disease. Hemorrhage is a prominent symptom, occurring after violent motion or excited by coitus or by straining at stool. The entire periphery of the vagina may finally become involved.

The DIAGNOSIS cannot be made with certainty without microscopic examination of pieces of the growth. A strong presumption of the presence of the disease is not, however, difficult to establish.

The PROGNOSIS is more favorable in the circumscribed sarcomata than the diffuse, on account of the greater probability of their complete removal, although it is extremely bad in both.

The TREATMENT in the circumscribed form is operation if seen before ulceration and lymphatic involvement has occurred.

In this, as well as in the diffuse form, the treatment is identical with that of carcinoma, if the disease has progressed beyond removal by the knife.

Carcinoma and Epithelioma of the Vagina.—Secondarily, the vagina is frequently invaded by carcinoma and epithelioma; it is rare, however, to find these growths occurring primarily. It may be involved by the extension of uterine carcinoma, of carcinoma of the rectum, vulva, urethra, least frequently of carcinoma of the bladder, and finally, as metastatic nodules following the removal of a primary cancer. The primary cancer of the vagina appears principally in two forms: papillary epithelioma, which is most frequent, or diffuse carcinomatous infiltration of the vaginal wall.

The first form appears as a circumscribed sessile growth, most frequently situated upon the posterior wall. The second form is a carcinomatous infiltration of the vaginal wall, usually circular in outline, involving large areas of tissue and occupying the mucous membrane and submucous layer. It may be of either the medullary or scirrhous type.

Concerning the ETIOLOGY very little is known. The cases occur with greatest frequency between the ages of thirty-one and forty. Young individuals are seldom affected. Traumatic insults—such, for instance, as the pressure of badly-fitting pessaries—have been urged as causes. But this opinion is unquestionably erroneous. We lay stress upon this point, because among the laity, cancer even of the womb is so commonly attributed to the irritating pressure of pessaries, that the physician is often much hampered in their use by the fears of his patient. Primary cancer of the vagina is extremely rare. In a large experience but three cases of it have been seen by the author. In each case the sore was just behind the cervix, yet in not one had a pessary ever been used by the patient. Of course to cancer of the womb the pessary can bear no causal relation whatever, because it does not come in contact with that organ at any point.

In the course of carcinoma of the vagina, in all its forms, there

is a rapid progress toward ulcerating degeneration of the tumor, while peripherally and upon its base the neighboring tissues are invaded. By the advancing destruction of the tumor the cancerous ulcer is formed which may readily perforate into the neighboring cavities. From the frequent seat of the neoplasm upon the posterior vaginal wall, recto-vaginal fistula is usually the first to form. The further extension in the lymph-channels involves, in sympathy, the lymph-glands in the pelvic connective tissue, and, if the growth is deeply seated, also the inguinal glands.

The SYMPTOMS consist principally of hemorrhage, ichorous discharge, and pain. Occasionally the patient complains of the mechanical inconveniences of stenosis and of obstruction of the lumen of the vagina, as impediments to sexual intercourse, or the disease may first be recognized during labor as obstruction in the birth-canal. Lastly, those disturbances arising from the involvement of the neighboring organs, the rectum and the bladder, may be the first clue to the disease.

The essential and never-failing symptoms are the anomalies of secretion—hemorrhage and the watery and ichorous discharge. These depend for their prominence upon the form and vascularization of the carcinoma and the stage in which it comes under observation. The hemorrhage usually first makes its appearance after coitus or after the straining at stool. Death occurs usually after spreading of the ulceration from the progressive debility caused by the hemorrhages and discharges. It may also occur in very vascular growths from hemorrhage. Pregnancy may occur in the course of vaginal carcinoma, and the growth then forms a serious complication in labor.

The requisites for the DIAGNOSIS of vaginal carcinoma are the presence of either a firm sessile tumor immovably fixed in the tissues, with an ulcerated surface, or an infiltrated ulcer. Serous or ichorous discharge is always present, and hemorrhage is easily produced by contact. Papillary epithelioma may appear as a cauliflower growth, and is to be distinguished from unusually large benign papilloma by the greater tendency to hemorrhage and the striking brittleness of its tissue. From sarcoma the differential diagnosis is to be made only by the microscope. It is of importance to determine if the carcinomatous growth be of primary or secondary origin. A thorough investigation of the neighboring organs and the position of the growth will determine this question.

The growth is only to be regarded as a primary vaginal carcinoma when rectum, vulva, bladder, and urethra are excluded as points of origin, and the portio vaginalis remains uninvolved or is attached only externally next to the vaginal growth, and no other distant organ is the seat of cancerous disease. The epithelial and papillary forms of cancer usually involve the vagina secondarily by extension of their growth from the neighboring organs by continuity of tissue. Carcinoma developing from infiltrated nodules may occur in the vagina by metastasis from distant organs, as cancer of the stomach.

Unfortunately, in most cases of cancer of the vagina it is impossible to remove the entire growth. Destruction of the mass has been fruitlessly attempted with the sharp curette, the galvano-cautery snare, and cauterization with the most varied corrosives. Yet under certain circumstances one is forced to employ them. When the tumor is so far circumscribed that its total extirpation with enough surrounding healthy tissue to ensure its complete removal is possible, this is the only procedure. The operator should not hesitate from fear of too extensive a wound to remove all suspicious tissue. Should the inguinal chain of lymphatics be enlarged, they too should be removed. Owing to the elasticity of these tissues it is often possible after extensive removal of the vaginal substance to unite the edges of the wound by suture.

Usually the cases come under notice too late for operation. The TREATMENT is then palliative. The hemorrhage and discharge are best controlled by the destruction of the cancerous mass by the use of the curette, galvano-cautery, or corrosives. Great care must be exerted in applying these means that the bladder, rectum, or peritoneal cavity is not opened. Vaginal suppositories, containing equal parts of pure pepsin and salicylic acid—say, from five to ten grains each—have been found useful. Sometimes the dry powder is applied directly to the ulcer, and confined there by a tampon of cotton. This application is very irritating to the vulva and outlying genitalia, which should therefore be protected by a coat of vaseline or of zinc ointment. The hemorrhage may become very alarming, and require tamponing of the vagina with gauze wet in saturated alum solution or with absorbent cotton that has been wet with Monsel's solution and dried. Later in the disease the discharges will require suppositories of chloral and tannic acid, or douches of peroxide of hydrogen or permanganate of potash, to

correct their odor. The pains imperatively demand the use of narcotics, and, as in all cases of advanced cancer, these drugs should be given in increasing doses according to the effect upon the patient. There is no excuse for allowing these doomed women to suffer more pain than is necessary, and the physician is not doing his whole duty if he neglects to provide his patient with the comfort which opium gives.

Sarcoma of the Womb.

Primary sarcoma of the uterus occurs anatomically and clinically in two forms—fibro-sarcoma, or sarcoma of the uterine parenchyma, and diffuse sarcoma, or sarcoma of the uterine mucous membrane. Both forms may consist of round or of spindle cells.

Fig. 224.

Sarcoma of the Body of the Uterus.

Fibro-sarcoma forms a more or less firm, occasionally soft, circumscribed, rounded tumor growing from the uterine parenchyma and resembling the fibroid tumor. Like these growths it may be submucous, subserous, or interstitial. The growth occurs in the

form of rounded nodules, of a rich cellular formation, which appear to have invaded the original tissue. When submucous or subserous, they form sessile tumors projecting into the cavity or upon the surface of the uterus. As interstitial growths they are imbedded in the tissues of the uterus and form thickenings of its wall. The isolated sarcomatous tumors are usually composed of round cells. The spindle-celled fibro-sarcoma usually occurs in disseminated nodules lying in the uterine parenchyma, but it may infiltrate equally the whole organ. It is rare for this growth to appear upon the cervix. Often the uterine fibro-sarcomata are the result of sarcomatous degeneration of fibro-myxomatous tumors.

The diffuse sarcomatous tumors grow from the connective tissue of the uterine mucous membrane, and are mostly composed of small round cells, seldom of spindle cells. They appear as very soft knotty or papillary growths upon the mucous membrane. They may occur in single areas or infiltrate the whole mucous membrane. The growth usually involves the uterine wall, which it penetrates, forming a tumor upon the peritoneal surface. Those intestines lying near become involved, adhesions are formed to the abdominal wall, and the neighboring organs are invaded by the disease. The soft round-celled medullary sarcomata may present themselves as polypoid growths attached to folds of the mucous membrane. They are grayish-white in color, resembling brain-matter, rich in blood-supply, and of soft consistency. The surface is usually necrotic, uneven, and dotted over with fungus-like masses. The necrotic surfaces are covered with dark-brown colored sloughs. These growths are closely related to the cancerous degenerations of the uterine mucous membrane. The cervical mucous membrane seldom appears to be the point of origin of the diffuse sarcoma.

Concerning the CAUSES of the origin of sarcoma little is known. It may occur at any age. We have observed it as early as the twentieth year and as late as the seventieth. But undoubtedly there is a special predisposition for the development of sarcoma at the climacteric period. There is no reliable proof, as is often asserted, that fibro-myomata undergo change into sarcoma. It is a disease which especially attacks nulliparæ. It has been remarked that diffuse sarcoma originates in the interglandular connective tissue of the mucous membrane, just as carcinoma of the body of the uterus develops from proliferation of the cells in the glandular element.

As the SYMPTOMS of the two forms of sarcoma differ essentially in character, they will be described separately.

The most prominent symptoms occasioned by the fibro-sarcomata are those caused by pressure according to the position and the size of the tumor. Pain resembling in character labor-pains, hemorrhages, and watery discharge are the cardinal symptoms. The pain may wholly be absent or be slight. It is occasioned by the attempts on the part of the womb to expel the mass, and is referred to the dorsal and hypogastric regions. Hemorrhage is first recognized as profuse menstruation, and does not change its character until a late stage of the disease. The discharge may be exceedingly profuse, of a bloody, serous, or watery character, and finally with a very unpleasant odor.

The uterus is much increased in size and the cervical canal is tense. The cervical canal may, however, be dilated and patulous, permitting the introduction of the finger. The tumor-masses may project from the os into the vagina, or with a patulous cervical canal the finger may recognize the soft growths in the uterine cavity. The tumor may be expelled into the vagina by uterine contractions, which may indeed invert the womb. Pieces of the mass can readily be broken off by the examining finger before sloughing has taken place.

There is a marked cachexia and rapid loss of flesh and strength, and finally death from peritonitis; pyemia, ileus, or metastasis takes place, ushered in by extreme anemia. The metastasis is more frequent in fibro-sarcoma than in the diffuse form, and occurs in the lymphatic glands, the lungs, the liver, and the pelvic cellular tissue.

In the *diffuse sarcomata* there is usually no distinct tumor to be recognized externally. The womb is enlarged and fixed. The growth may push itself through the os, giving the picture of a circumscribed tumor. This projection through the cervical canal is not due to expulsive efforts on the part of the womb, as in the fibro-sarcoma, and is not attended with labor-like pains, but is due to the rapid development of the neoplasm. Pieces of the mass readily break off, and are carried away by the discharges. Hemorrhage is seldom absent, and is usually violent. The menstrual type is soon lost, and as the disease usually occurs in the climacteric period or later, the hemorrhages excite alarm. The hemorrhage may be replaced, especially in the beginning of the disease, by

a continuous slight bloody discharge. Along with these profuse losses of blood is a rich watery or bloody-serous discharge, that is present before sloughing of the tumor-mass has taken place, and is usually of a disagreeable odor. Sloughing occurs early, and with it the discharge takes upon itself the peculiarities of the secretion from the gangrenous parts. The pain, very seldom absent, is often of great violence. It is of a tearing character, and depends for its intensity upon the depth to which the sarcomatous infiltration has penetrated. Death occurs, preceded by rapid debility and extension of the growth through the uterine walls to the neighboring organs and pelvic floor.

The certain DIAGNOSIS of sarcoma of the womb is arrived at only by the careful microscopical examination of its structure. The examination of small particles contained in the discharges is not sufficient to establish an absolute diagnosis. Either pieces of the extirpated growth or portions of the tissue removed deeply from the tumor by means of the sharp curette should be used. The presence of sarcoma must be suspected when a supposedly fibrous tumor is discovered in the climacteric period, or when a small supposedly fibrous tumor, formerly occasioning no symptoms, at this time or later begins to increase in size or to be attended with pain and hemorrhage. The occurrence of hemorrhage in supposed fibroma of the uterus, when menstruation has for a long time ceased, should always excite grave suspicion. The hemorrhage in fibromyomata ceases or lessens when the climacteric is passed. The copious bloody-serous discharge is a still more characteristic symptom, which, while not always present in fibro-sarcoma, never accompanies benign fibrous tumors except when sloughing has occurred. A further characteristic symptom of sarcoma is the abnormally rapid growth, especially if observed in the climacteric years, when fibromata do not usually increase in size. This is convincing when the growth is soft and accompanied by unusually violent pain. The softness of the growth on palpation, permitting the ready penetration of the finger into the tumor-mass, is, when sloughing fibroid is excluded, decisive for the diagnosis of sarcoma.

When to these symptoms are added an unproportionate loss of flesh and strength, cachexia, and anemia, the diagnosis is made with ease. The exact diagnosis should always be made after extirpation by microscopical examination.

The differential diagnosis between diffuse sarcoma and carcinoma

of the fundus is never easy and may be impossible. From carcinoma of the vaginal portion of the womb sarcoma may easily be recognized. In the latter disease the sarcomatous mass will be found projecting into the vagina through a healthy cervix, the margin of the os being recognized by the finger as a constricting band.

Much more difficult is the recognition of diffuse sarcoma from certain benign hypertrophies of the uterine mucous membrane, as endometritis fungosa. This affection seldom occurs after the climacteric, as is the case with diffuse sarcoma; the age of the patient is therefore of some help in establishing the differential diagnosis. The general condition of the patient is of great importance. In fungoid endometritis the patient may be anemic, but never becomes cachectic. The bloody-serous discharge is seldom present. The os is more or less patulous in diffuse sarcoma, admitting the finger. It is closed in endometritis. In sarcoma the uterus is large, and tender to pressure; in endometritis the size is not increased and there is no tenderness. The rapidly-proliferating sarcomatous growth frequently projects from the os, polyp-like, into the vagina; this never occurs in benign hyperplasias of the uterine mucosa. The benign hyperplasias always remain superficial growths, never involving the uterine substance. Sarcomatous growths belong usually to the deeper layers from the beginning, and infiltrate rapidly the uterine substance. The polypoid growths of fungoid endometritis sometimes grow again after removal, yet the return growths differ wholly from the residual growths of sarcoma.

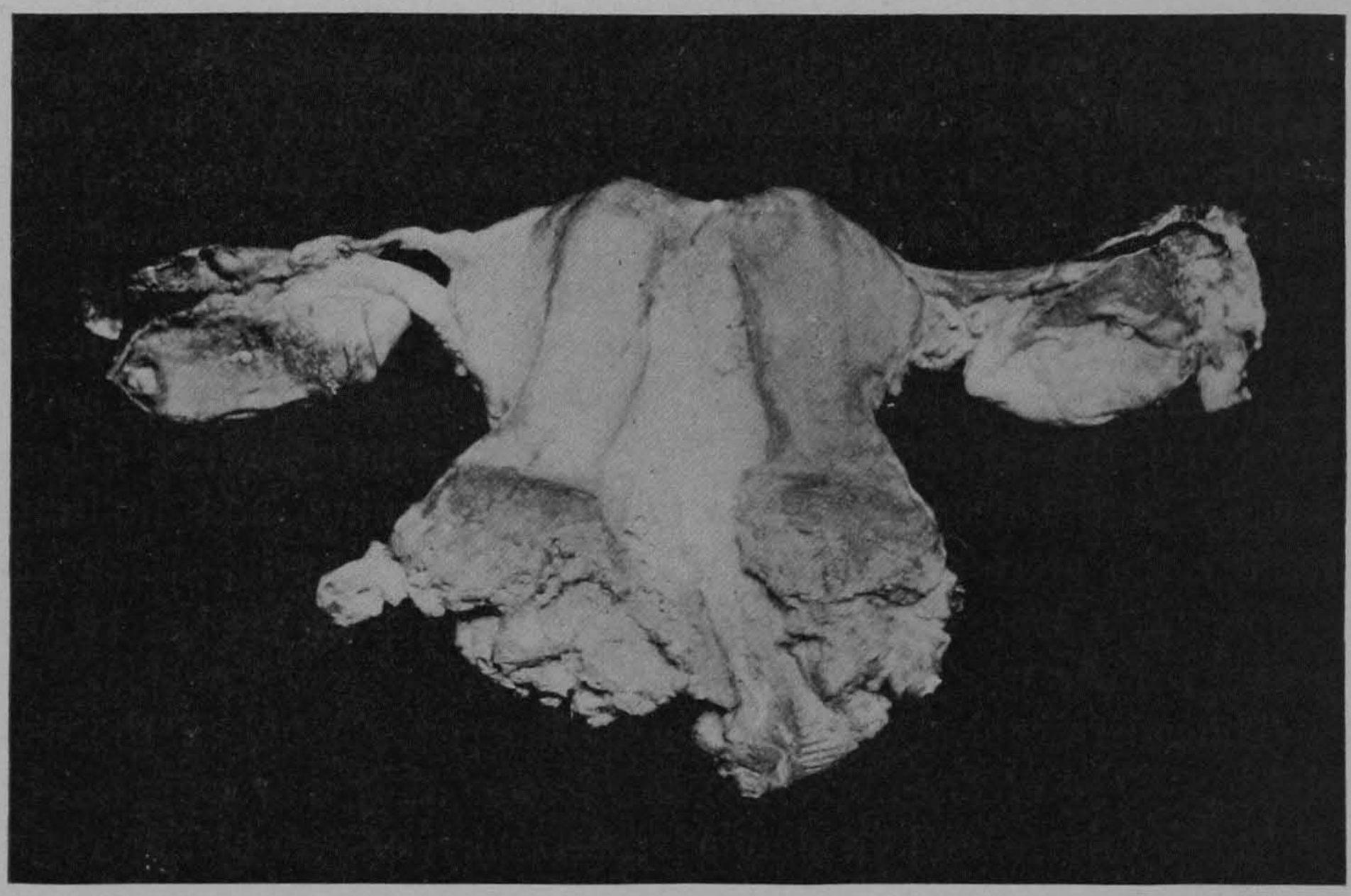
The microscopical examination of the pieces found in the discharges often leads to error, as in sarcoma they may long consist of healthy tissue, and in simple hypertrophy, of granulation tissue resembling small round-cell sarcoma. Errors may be avoided by examining several pieces of the growth removed from different positions. It is safe to always assume that endometritis fungosa, so called, is in reality an early stage of beginning malignancy. Many patients have been allowed to progress so far as to be incurable under the supposition that the disease was benign. There is grave doubt whether such a thing as benign endometritis fungosa exists.

The PROGNOSIS in both forms of sarcoma is hopeless when a whole growth cannot be removed by operative measures. These growths may progress, slowly or quickly, to death. Compared with

the carcinomata, the prognosis for cure by complete removal is more favorable, as the lymphatic involvement is slower and the early recognition more probable.

The TREATMENT consists in total hysterectomy when the disease is recognized before involvement of the broad ligaments or of neighboring tissues has rendered the operation impracticable. Only when the removal is no longer possible should the treatment be symptomatic. In the abandoned cases the symptoms may be for a time controlled and the life of the patient prolonged by scraping away the diseased tissue with a sharp spoon and cauterizing the surface of the wound. The cauterization may be performed by the use of chromic-acid solution, fuming nitric acid, chloride-of-zinc solution,

FIG. 225.



Epithelioma of the Cervix Uteri, showing the well-defined limitation of the disease.

or, better, by the Paquelin thermo-cautery or by the galvano-cautery porcelain burner heated to a red heat. The further treatment is analogous to that of carcinoma—tonics and attention to the bowels, whilst opium must be given to relieve pain.

CANCER OF THE CERVIX.

Of all women who die from cancer, one-third die from cancer of the uterus. The disease is not so common in the negress as in her white sister. Uterine cancer occurs most frequently between

the ages of thirty and forty years and between fifty and sixty years. It has not been observed under seventeen years, one case being reported in a girl of that age. The frequency of its occurrence increases from thirty years to the menopause, after which it again decreases. Very many cases, however, have been observed after the climacteric period.

Only a small percentage of patients suffering from uterine cancer are nulliparæ. Deep laceration of the cervix with ectropion of the lips, if unheeded, is a possible predisposing cause of cervical cancer. It would appear that the constant irritation to which the raw, granular everted lips are subjected in locomotion and coition is the dangerous element. Long-standing cervical catarrh has also, perhaps, a causative influence. Finally, the cervix uteri, like most other ostia, as the lip, the pylorus, the cecum, and the rectum, is a favorite seat for cancer.

Heredity exerts a considerable influence in its causation. Among the higher classes of society carcinoma relatively seldom occurs, while among those of the lower grades, who are required to struggle for the necessities of life, cancer is observed with striking frequency. In this respect the occurrence of cancer is directly in contrast with that of uterine myoma.

Epithelioma of the cervical mucous membrane may grow from the squamous epithelium of the rete Malpighii, from the cylinder epithelium within the cervix, or from the glandular epithelial cells. Cancer of the uterine parenchyma has its origin in connective-tissue cells.

Cancer of the cervix may present itself either as a papillary or cauliflower growth, a nodular or parenchymatous growth, or a superficial or ulcerating disease of the mucous membrane.

The cauliflower or papillary form grows from the intravaginal portion of the cervix, and may be limited to it for a long time. It may develop so profusely as to hide the remaining healthy portion of the cervix and the os, appearing as a large papillary growth filling up the upper portion of the vagina. Finally, the growth spreads to the vaginal vault, which it deeply involves, all the tissues surrounding the uterus sharing in the infiltration. Extension may take place through the cervical canal to the endometrium by continuity of tissue, and the body of the womb may become involved.

The nodular or parenchymatous form of cervical cancer has its origin in one or more nodular formations in the cervical mucous

membrane. Usually they are situated just beneath the membrane, although they may be upon its surface. The nodules soon part with their covering of mucous membrane, and form ulcers which fuse together and, by extension, involve the fundus of the uterus and the vaginal cul-de-sac. The bladder, rectum, and pelvic cellular tissues may finally become invaded.

The superficial or ulcerative form begins as an infiltration of the mucous membrane of the cervix. The infiltrated area soon parts with its covering of mucous membrane and ulcerates. The ulcer progressively involves the deeper tissues, losing its necrotic surface as it advances, until finally the whole womb may be converted into a crater-like cancerous mass. By extension the peri-uterine tissues are invaded, while the vagina may be involved but little.

To the malignancy of the cervical carcinoma is added increased danger from the fact that the beginning, as a rule, is attended by no symptoms, and the disease is almost always discovered when it is too late for radical treatment. Only in the superficial or ulcerative form of cancer is the early stage attended with discharge and occasional hemorrhages. The other forms of cancer are attended with very slight discharge, and, other symptoms being absent, the case does not come to seek the advice of the gynecologist until the cancerous sore has already formed. This is attended with a more copious discharge and bleeding, which may occur periodically and be confounded with metrorrhagia from other causes. If the patient has not passed the menopause, the hemorrhages begin as increase in the normal menstruation, but later on occur between the periods. Frequently the first symptom noticed is hemorrhage following coitus. In the scirrhous form of the disease the bleeding may be absent, yet it very generally accompanies the disease, and it may be very alarming. The most extreme grade of anemia may result from the repeated hemorrhages, yet they very rarely are so copious as to produce death.

The first hemorrhage is usually followed by a sanious discharge, which may be slight and attract no more attention than the mucous discharges preceding it. The discharge may be purely serous and devoid of odor. As soon, however, as ulceration has taken place the discharges excite suspicion. Their color is at first dark from the admixture of fragments of gangrenous tissue, then grayish-yellow, green, brown, or black, and of a sickening smell. The pain at the beginning is slight or wholly wanting. Violent pain occurs when the infiltration has involved the pelvic connective tissue. As

× Sanious = a thin, fetid, greenish, serous discharge

a rule, the pain is proportionate in severity to the size and the hardness of the infiltrated area. The pain is most violent in slightly ulcerated carcinomata, or in those ulcerating late, when the hard, unyielding proliferations fill the entire pelvic cavity.

To the true pains of carcinoma, of a pricking, lancinating, or burning character, are soon added those of chronic peritonitis occasioned by the inflammatory adhesions which form as soon as the neoplasm has invaded the peritoneum. The cervical canal in its involvement may be so narrow as to retain the secretions of the uterine cavity. Attempts on the part of the uterus to expel this dammed-up secretion excite violent colicky pain. Complete closure of the cervix may occur and hematometra or pyometra result, but this is very rare.

The peculiar hardness of the abdominal wall is in a great measure occasioned by the pain, and is characteristic of the later stages of carcinoma. The muscular tissues are strongly stretched, the intestines elevated, and the pelvic walls give to the touch a peculiar sense of hard resistance.

The other symptoms are occasioned by the extension of the disease to the neighboring organs. Usually the growth extends to the anterior vaginal wall and involves the bladder. As a result of the infiltration of the submucous layers of the bladder-wall the mucous membrane becomes irritable, and there is pain on micturition with vesical tenesmus. It is seldom that there is retention of urine. As the growth advances the ureters become compressed or share in the involvement; their calibre is narrowed, and hydronephrosis may result. Soon the cancerous masses in the bladder-wall ulcerate; the tissues intervening between the bladder and vagina become progressively thinner, and finally are perforated. Frequently the rectum is also involved. Preceding the involvement of the rectum there are usually obstinate constipation and rectal catarrh from the pressure of the tumor obstructing its calibre. Following the rectal involvement is a progressive thinning of the recto-vaginal septum by ulceration and perforation, with the production of a recto-vaginal fistula.

The patient may remain in excellent general condition until the disease has attained extensive development. Carcinomatous disease frequently attacks large and strong women. The nutrition of the body then soon begins to fail on account of the continuous drain of blood and serum from the diseased cervix, of the accompanying

disturbances in the intestinal tract, and of the general degenerative effect of the cancerous disease on the blood. Usually there is obstinate constipation, although diarrhea may be present. There is a progressive loss of appetite, which may amount to an absolute disgust for food. Frequently there is vomiting, which may be the result of various causes. The stinking odor of the discharges is perhaps a decided element, and the uremic poisoning from pressure on the ureters has much to do with its production. The pain deprives the patient of sleep. Cachexia soon results from the frequent loss of blood and the profuse discharges. The legs become œdematous. At a later stage diarrhea sets in, and the patients lose flesh and strength rapidly. Fortunately for the patients, uremia, occurring from the slow occlusion of the ureters toward the close of the disease, clouds the intellect. They become more indifferent to their condition; the anxious expression is lost; the complaints of pain are less frequent; and they lie listless and dull upon their beds, without even attempting to change their positions. Gradually the cloud darkens, occasionally broken by a lucid interval, until death ends their pitiable existence.

In the majority of cases death takes place from uremic poisoning when the ailment is left to run its course and the patient is not carried off by intercurrent disease. The ureters are found thickened, often to the size of the finger, and the pelvis of the kidney greatly distended with urine. Purulent peritonitis may occur, and hasten the woman's end before the cancerous disease has involved the ureters. Exhaustion is of course a large element in the causation of death.

It is difficult to estimate the COURSE of the disease because the early stages are not recognized. As a rule, we may say that death occurs in from one year to one year and a half after the inception of the disease.

Carcinoma of the cervix is usually of easy DIAGNOSIS, from the fact that it is, as a rule, fully developed and often far advanced when it comes under observation. In the early stages of its development it is difficult of recognition. The cauliflower or papillary kind is the easiest to be recognized. Here the quick growth, the irregular, knotted, or cauliflower shape, and the rapid disintegration serve to make the diagnosis clear. As a rule, all sessile papillary or villous growths of the cervix are carcinomatous.

The parenchymatous or nodular form of cervical cancer is more

difficult of diagnosis. It is readily confounded with myoma if the nodules are situated in the patulous cervical canal or superficially, bulging the mucous membrane of the vaginal portion. A myoma, however, is of much harder consistency, and it is seated in normal tissue, while the softer carcinomatous nodules are surrounded by infiltrated and inflamed tissue. On incising the growth the myoma cuts with considerable resistance, while the carcinoma is soft like marrow. A positive diagnosis at times cannot be made until an excised nodule has been examined microscopically.

The differential diagnosis between superficial or ulcerating carcinoma of the mucous membrane of the cervical canal and long-standing cervical catarrh is arrived at with great difficulty. In the early stage of this form of carcinoma the appearance is the same in both conditions. The folds and markings of the catarrhal mucous membrane are perfectly preserved in cancer, though the submucous layers be involved, and the evidences of the malignancy only appear when ulceration has occurred.

Severe long-standing cervical catarrhs, with thickening of the vaginal portion and nodular enlargements of the surface, frequently excite suspicion of cancer. On close examination it will be found that the nodules consist of closed follicles filled with mucus and the surface is covered with epithelium. The absence of ulceration indicates the benign character of these cases of advanced hypertrophy of the cervix. Should the cervix be eroded, the diagnosis may be made by the character of the denuded surface. In cancer the margins of the ulcer are sharp and dentated, and the surface bleeds readily. The presence of numerous follicles, studding the entire cervix or the marginal zone of the ulcer, argues in favor of a benign character of the disease. In the digital examination of cases of long-standing cervical catarrh, the sensation of an irregularly degenerated, hard, carcinomatous growth may be imparted to the finger. On examination with the speculum, however, it will be noticed that the suspicious points are clothed with epithelium, and the absence of ulcers will clear the diagnosis. It is well to bear in mind that carcinomatous growths are easily broken up by the examining finger, while chronic inflammatory changes resist even strong pressure. A positive diagnosis should not be given, however, until a careful microscopical examination has been made of pieces of the growth removed for that purpose. Care should be taken that the tissue for examination should not be removed too superficially.

When ulceration has taken place the diagnosis is comparatively easy; but it must be remembered that carcinomatous nodules of the cervix may reach a considerable size before perforating the mucous membrane. On the other hand, large ulcerating myomata which are protruding from the cervix may so resemble carcinomatous growths as to excite grave suspicion. Diphtheritic inflammatory deposits upon the cervical portion and neighboring parts of the vagina may so closely resemble carcinoma, through the uniform swelling and ichorous discharge mixed with blood, as to make the diagnosis of carcinoma doubtful.

It is often difficult to determine how far carcinomatous infiltration has extended. The neoplasm often involves the pelvic connective tissue much deeper than it appears upon examination. The extension of the growth is best determined by combined examination through the rectum under ether narcosis. The mobility of the womb will also give valuable information on this point, for if that organ is firmly fixed the presumption is that the disease has invaded the peri-uterine tissues. By catching hold of the cervix with a tenaculum, and by dragging the womb down, much information can be obtained through the rectum as to the condition of the broad ligaments.

Unfortunately, the patients suffering with carcinoma of the cervix come under observation so late in its course that the total removal of the growth is usually rendered impracticable by the extensive involvement of the neighboring tissues. The condition of the patient is then most unfortunate. There is almost unbearable pain, insomnia, hemorrhage, progressive loss of flesh and strength, and foul odor from the discharges. This condition may long be protracted, or death from peritonitis or from some intercurrent disease may relieve the patient from her sufferings. The only favorable prognosis is afforded by the earliest possible operation, when the disease is yet limited to the cervix and the whole womb can be removed.

The TREATMENT of carcinoma of the cervix is either radical or palliative. The radical treatment comprises the extirpation of the whole womb with enough surrounding healthy tissue to ensure the complete removal.

As long as the disease is confined to the cervical tissue there are hopes of a radical cure, and, as has been stated, complete and thorough extirpation of the womb and all its appendages, together with as

much contiguous healthy tissue as is possible, is the only treatment to be considered. The method of removal is either the total abdominal hysterectomy or the combined operation as described elsewhere. Vaginal hysterectomy is not a proper operation for this disease, as by it sufficient healthy surrounding tissue cannot be removed with the same certainty or safety as by the other methods.

Palliative Treatment.—When the cancer has involved the vagina, or the wall of the bladder or of the rectum is infiltrated, or when there is found to be involvement of the broad ligaments, the inference is legitimate that the lymphatics have also become infected, and all radical treatment is contraindicated. Unfortunately, the radical treatment applies to a very small percentage of the cases met with both in private and in hospital practice. The onset of the disease is so insidious that early symptoms are overlooked, hemorrhages are referred to the "change of life" or to irregularities of menstruation, and the patients present themselves at last for advice with such extensive involvement that a brief respite from suffering and a short prolongation of their lives are all we can offer them. Our aim in these cases should be to check the wasting discharges and hemorrhages, and make the patients as comfortable as possible for the short time they have yet to live.

why not hysterectomy?

High amputation of the remaining cervix either by the knife or cautery will give remarkable temporary results. Patients will return home and for months remain free from hemorrhages, smelling discharges, and most frequently pain. So great will be the relief from suffering due to pain, anemia due to hemorrhage, and septicemia due to absorption of cancerous discharges that these women will often in a few months gain from twenty to fifty pounds of flesh. Ordinary simple or wedge-shaped amputation is impossible, as the disease has long since progressed far beyond the limits within which this operation is performed.

The method of high amputation was originated by Shroeder in 1878. His technique is as follows: The cervix is exposed by a perineal retractor and the labia held apart by assistants. The cervix is seized in the grasp of a double tenaculum or volsellum forceps and traction applied, the womb being drawn down as far as the elasticity of the uterine ligaments will permit. A circular incision is made from one-half to one centimeter beyond the margin of the diseased vaginal mucous membrane. There may be considerable hemorrhage from the divided vaginal arteries which

will require the application of hemostats and ligatures. After the hemorrhage has been controlled it is easy with the finger to separate the cervix from the tissues front and back, traction being made upon the cervix all the while. The connective tissue here contains no large vessels and is easily separated. The cervix is then drawn strongly to one side, rendering tense the parametric connective tissue on the opposite side, which contains the uterine vessels. This tense tissue, being easily recognized by the touch, is surrounded by a ligature, as in the operation for total extirpation. The manœuvre is best carried out by a half-blunt staphylorrhaphy or aneurysm needle. After tightly tying the ligature the included tissue is divided with scissors between the ligature and the cervix, and the ends of the ligature cut off short. This ligation should include the uterine artery. A ligature is similarly placed on the opposite side, and the tissues divided between it and the cervix. Frequently the tightly-stretched sacro-uterine ligaments interfere with the drawing down of the uterus. They may be included in a ligature and severed, when the uterus will readily descend. The ligatures should be applied as far from the cervix laterally as possible, so that the division of the tissues does not occur close to the cervix. The cervix is now transversely separated from the body of the uterus anteriorly as far as the cervical canal, and a stitch passed through the vaginal wall, the connective tissue, and the divided cervical wall, and brought out in the cervical canal. This, being tightly tied, provides the means for safely holding down the stump after complete separation of the cervix. Should there be any hemorrhage at this stage, it may be controlled by the application of several similar sutures. The posterior wall of the cervix is now cut through, and sutures passed as before around its circumference, uniting the mucous membrane of the vagina to that of the womb. As the upper end of the opened vaginal tube is much larger than that of the womb, the vaginal mucous membrane is thrown into folds by the sutures. On either side are openings in which the ligature strands lie; these require each a stitch to effect closure. If the ligatures include the uterine vessels and are tightly tied, there should be very little bleeding in this operation. The lower segment of the womb may be removed by this method if desired. Douglas's cul-de-sac is frequently opened; the author has opened it several times, but this misadventure did not increase the danger of the operation. The wound in Douglas's pouch should be imme-

diately closed by a continued suture of fine catgut. The vagina is to be carefully cleansed with boiled water and tamponed with iodoform gauze. The tampons are removed and renewed, and the vagina douched at intervals of twenty-four hours. In from five to eight days the tampons may be discontinued, but the daily douches are persisted in. On the tenth or twelfth day the patient may leave her bed. The early removal of the stitches is a matter of no importance, and the longer they remain the easier is their removal. Usually they are removed on the eighth day. If catgut be used throughout, there is no need of paying any attention to them whatever, as the loop is absorbed and the knot then falls off.

The steps of the operation are practically a combination of the first part in the vaginal hysterectomy with ligature and a simple amputation. A glance at the illustrations of these two procedures will render the steps clear.

The high amputation may also be performed by the *galvano-cautery knife.* The method is as follows: After exposing the cervix with a perineal retractor, and having the labia held apart by assistants, the cervix is seized by a double tenaculum or volsellum forceps and drawn down. The position of the bladder is determined by the introduction of a sound, and the site of the amputation carefully selected, so as to avoid wounding the bladder or opening Douglas's pouch. If it be found that the retro-uterine tissues are involved and that the peritoneal cavity must be opened to effect the excision, the operation should not be abandoned, for the results of such operations are said to be attended with little danger. In one such case, in which a hole was burnt into Douglas's pouch, no febrile movement whatever took place. The cervix should be amputated first, however, and afterward the retro-uterine tissues should be excised. A slightly curved cautery-knife electrode is applied cold to the point of election, the circuit closed, and a circular incision made, the cutting being finished without the removal of the knife. Should it be desirable to remove the knife in order that the direction of the incision be altered, the current should first be broken and the knife allowed to cool, in order to prevent hemorrhage.

After the circular incision has been made to the depth of about one-fourth of an inch the knife should be directed upward and inward, firm traction upon the cervix being kept up all the time. The remaining stump will be funnel-shaped, and should be gone

over again and again with a dome-shaped electrode to render the baking of the tissues more thorough.

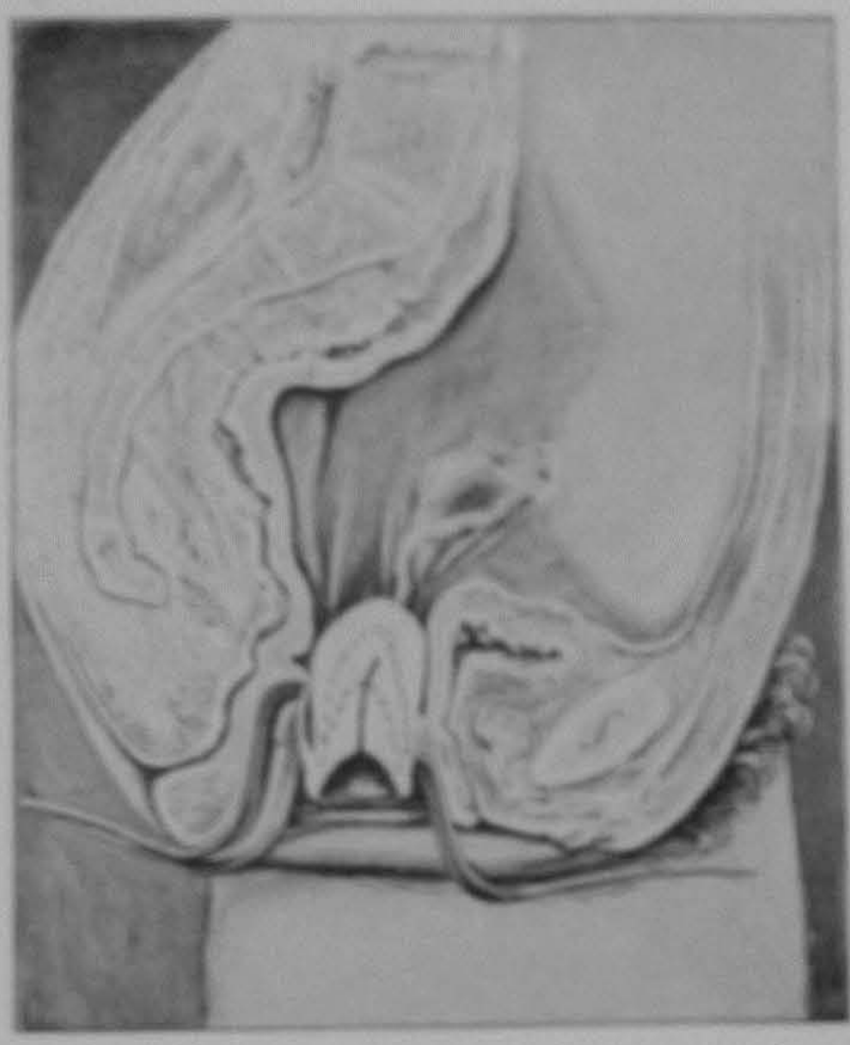
In cases requiring amputation above the internal os, the cervix should first be removed, the stump grasped on either side of the cervical canal, and the higher amputation proceeded with in the same manner as before. Thus it is possible by successive attempts to excise as high as is desired. The ragged edges are finally to be trimmed off by the cautery-knife and the cavity tamponed with iodoform gauze. The tampon is allowed to remain for forty-eight hours. The after-treatment consists in the use of antiseptic douches.

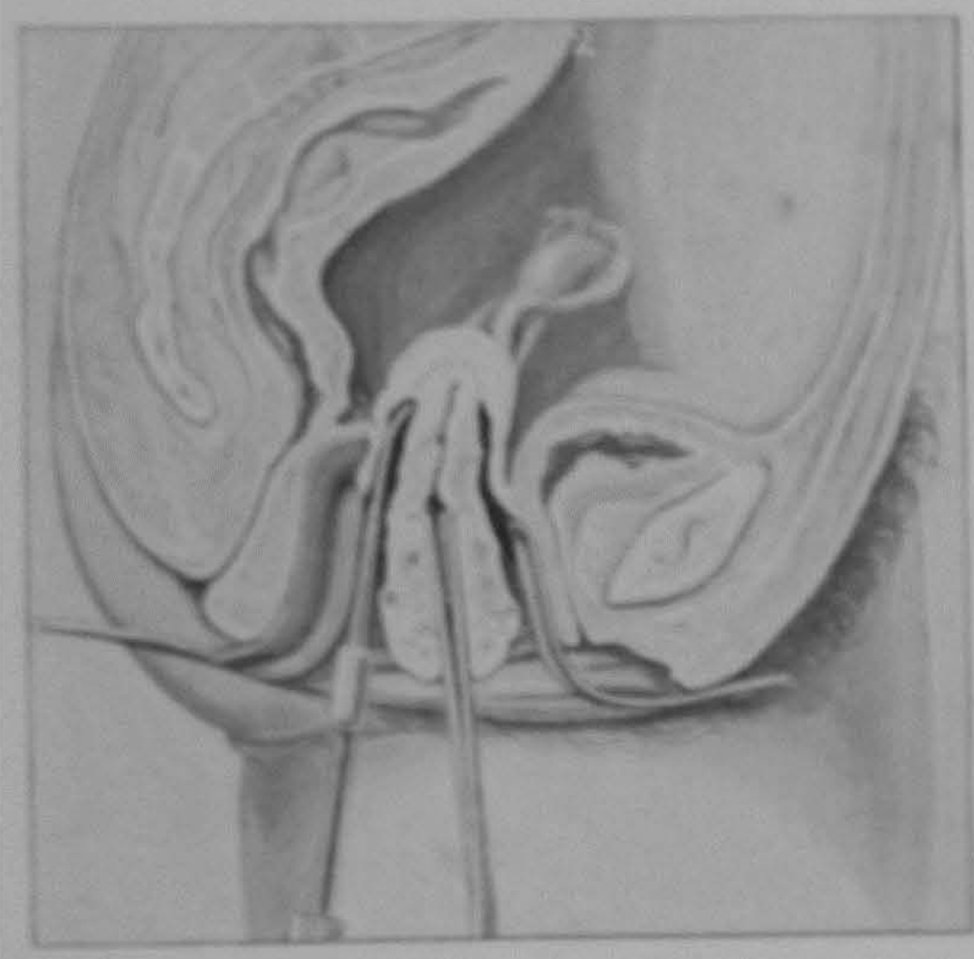
Almost as good results can be obtained by those not familiar with surgical procedures so formidable, by the use of the curette, scissors, and Paquelin cautery.

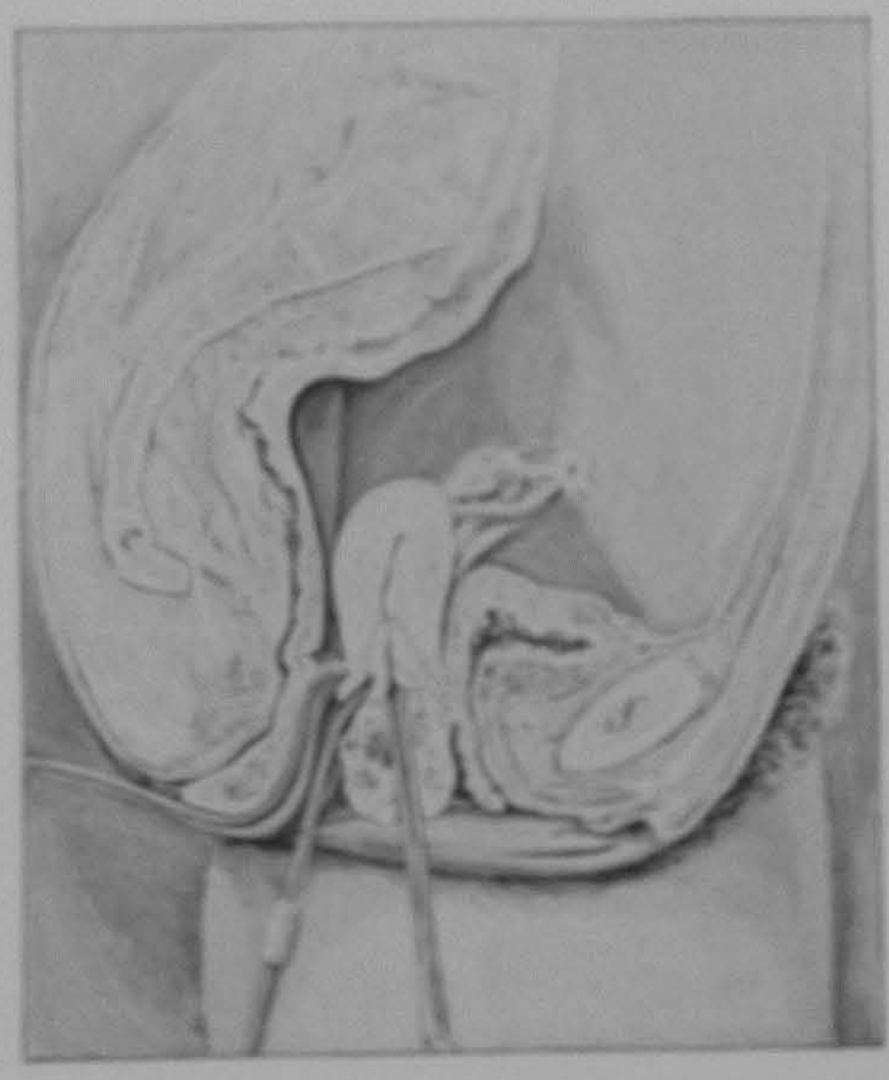
The ulcerating or vegetating cancerous masses may be rapidly broken up with the fingers and by scraping away with a sharp spoon curette. After quickly removing all the diseased tissue possible, the ragged edges are trimmed away with knife or scissors together with as much more of the disease as can be obtained. It is of importance to bear in mind the position of the bladder and rectum in cases of extensive involvement, as the infiltrated walls of these organs are readily perforated, thus rendering, by rectal or vesical incontinence, the condition of the patient more uncomfortable than before interference. After sponging the cavity dry, the raw surface is seared with the button-shaped end of the Paquelin cautery heated to a dull cherry-red heat, and the wound tamponed with iodoform gauze. The cauterization is repeated again and again, the aim being to char the tissues left behind as deeply as possible. This tissue subsequently comes away by slough. The dressing should be renewed in forty-eight hours, and the vagina douched with bichloride-of-mercury solution 1 : 4000. After such treatment the gain in weight and strength is fully as much and as rapid as after high amputation : it has the advantage of being a much less formidable operation. The improvement lasts usually from three to six months. In a few cases we have known the respite to last for several years.

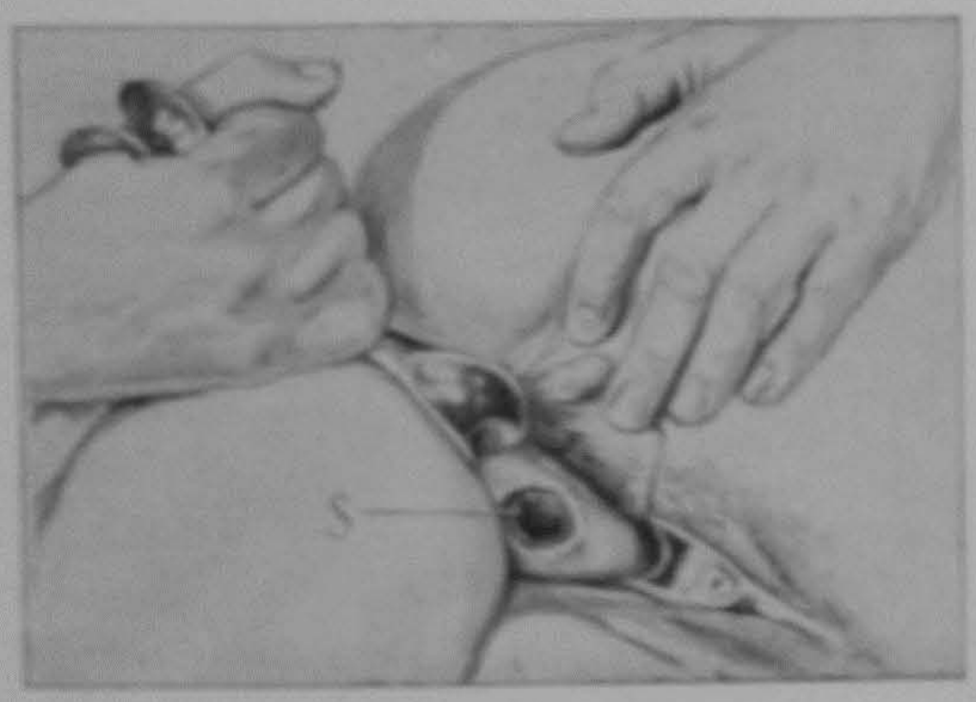
The use of caustics applied on small tampons to the raw surface after curetting, or independent of this operation has been advised. Nitric acid, chromic acid, 5 per cent. solution of bromine, caustic potash, and saturated solution of chloride of zinc are the caustics usually employed. After their application the vagina should be pro-

PLATE XVIII.

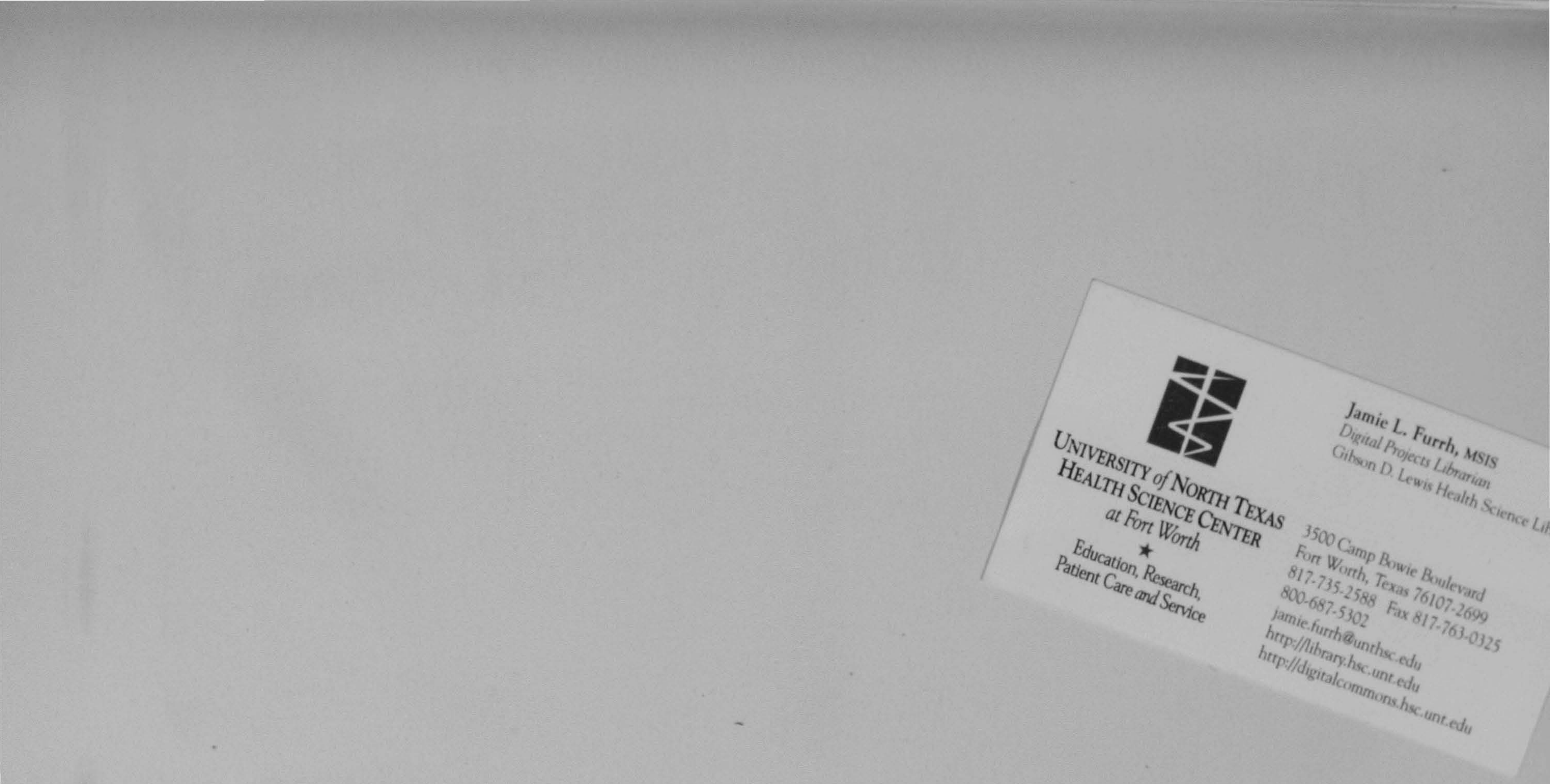








Removal of Carcinoma of the Uterus by the use of the Galvano-cautery after the method of Byrne.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tected by tampons wet in a saturated solution of sodium bicarbonate. In forty-eight hours the tampons are to be removed, and the parts dressed with iodoform gauze until the slough of the cauterized area separates. This usually takes place in from seven to ten days. The use of the Paquelin cautery seems, however, to meet every indication and to be attended with less discomfort to the patient.

When the disease returns, as it surely will, or originally, should for any reason the surgical procedure be refused or deemed inadvisable, an effort must be made to relieve the symptoms as far as possible with drugs. The success, however, is not very encouraging, and the nearer the end approaches the greater are the sufferings and the more horrible the condition.

The fetid discharges are best relieved by douches of permanganate-of-potash solution, 3 to 6 drachms to the quart, of peroxide-of-hydrogen and chloral solutions, or of suppositories of chloral and tannic acid, which on account of their irritant action must be used intermittently with the douches. Thymol solutions have also been recommended.

For the hemorrhages, which are seldom fatal, yet always weakening and alarming, it is best to use douches of very hot water or of very hot vinegar. If these fail, the vagina may be tamponed with pledgets of cotton wet in a saturated solution of alum. Should this fail to control the bleeding, some cotton, which has been soaked in Monsel's solution and dried, may be placed upon the cervix and secured by a gauze tampon. The use of Monsel's solution is seldom required, and should never be resorted to if it is possible to control the bleeding by other means. It produces dense coagula which are liable to occasion fresh hemorrhage in their subsequent removal, or, if allowed to stay, undergo decomposition and add to the patient's suffering.

To prevent erythematous eruptions from the discharges, the external genitals should frequently be cleansed with castile soap and warm water, washed with lead-water, and anointed with borated vaseline.

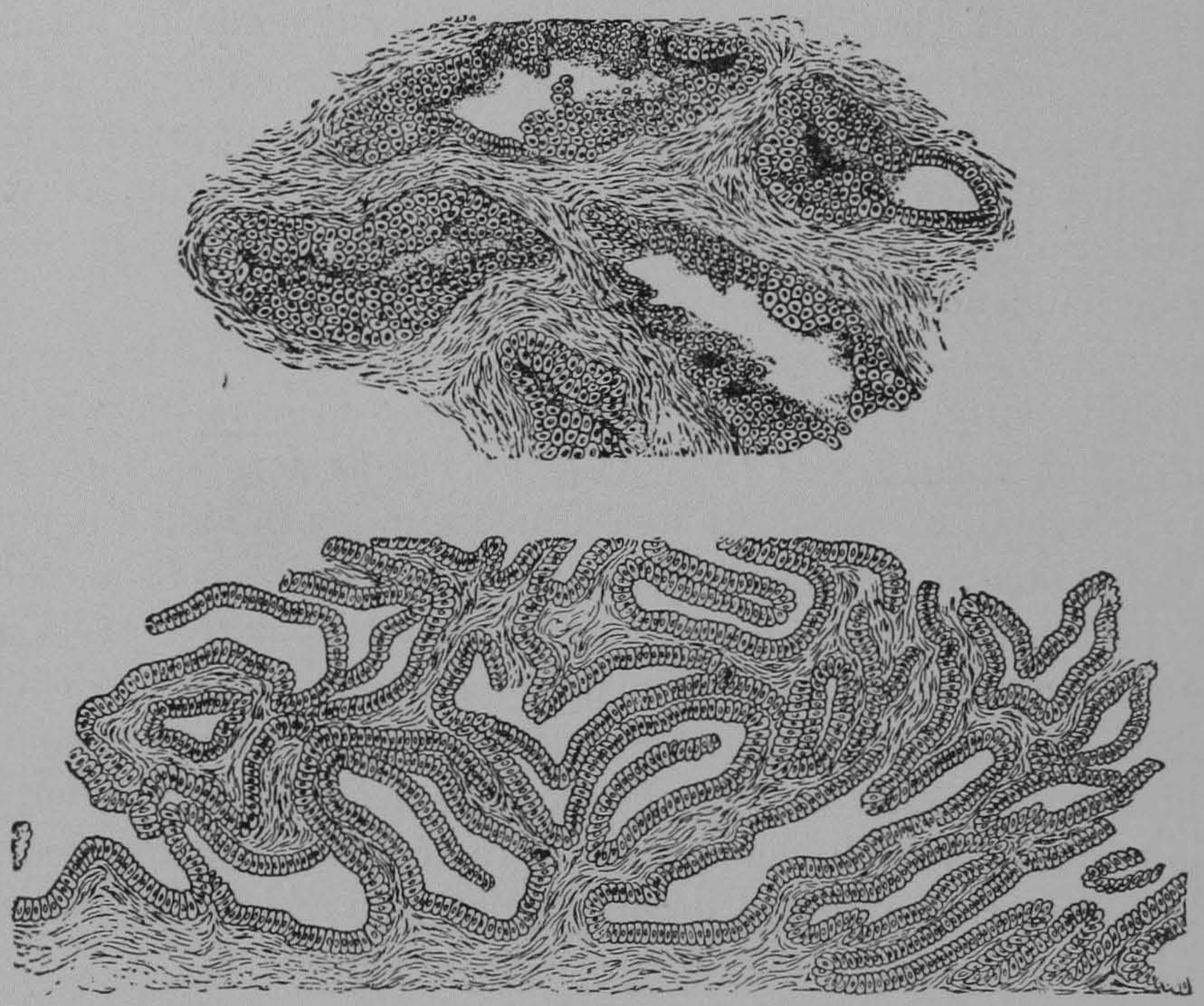
The patients, beside local treatment, require tonics and easily-digested food. The bowels are prone to become constipated, and require special care. The pain, though modified by local treatment, is distressing and demands the use of morphia. The withholding of opium from these sufferers is cruel in the extreme, and either the administration of some form of the drug by the mouth or the

hypodermic use of morphia in whatever quantities required, is demanded in every case. They have but a few months to live; let these months be as comfortable as possible.

Carcinoma of the Body of the Uterus.

Carcinoma of the body of the uterus is less frequent than that of the cervix, and a more frequent condition than sarcoma. It is more a disease of advanced age than cervical carcinoma, and is not usually seen before the menopause. It may occur in nulliparous women, and is then usually found in sterile women who have passed the climacteric and in old maids.

Fig. 226.



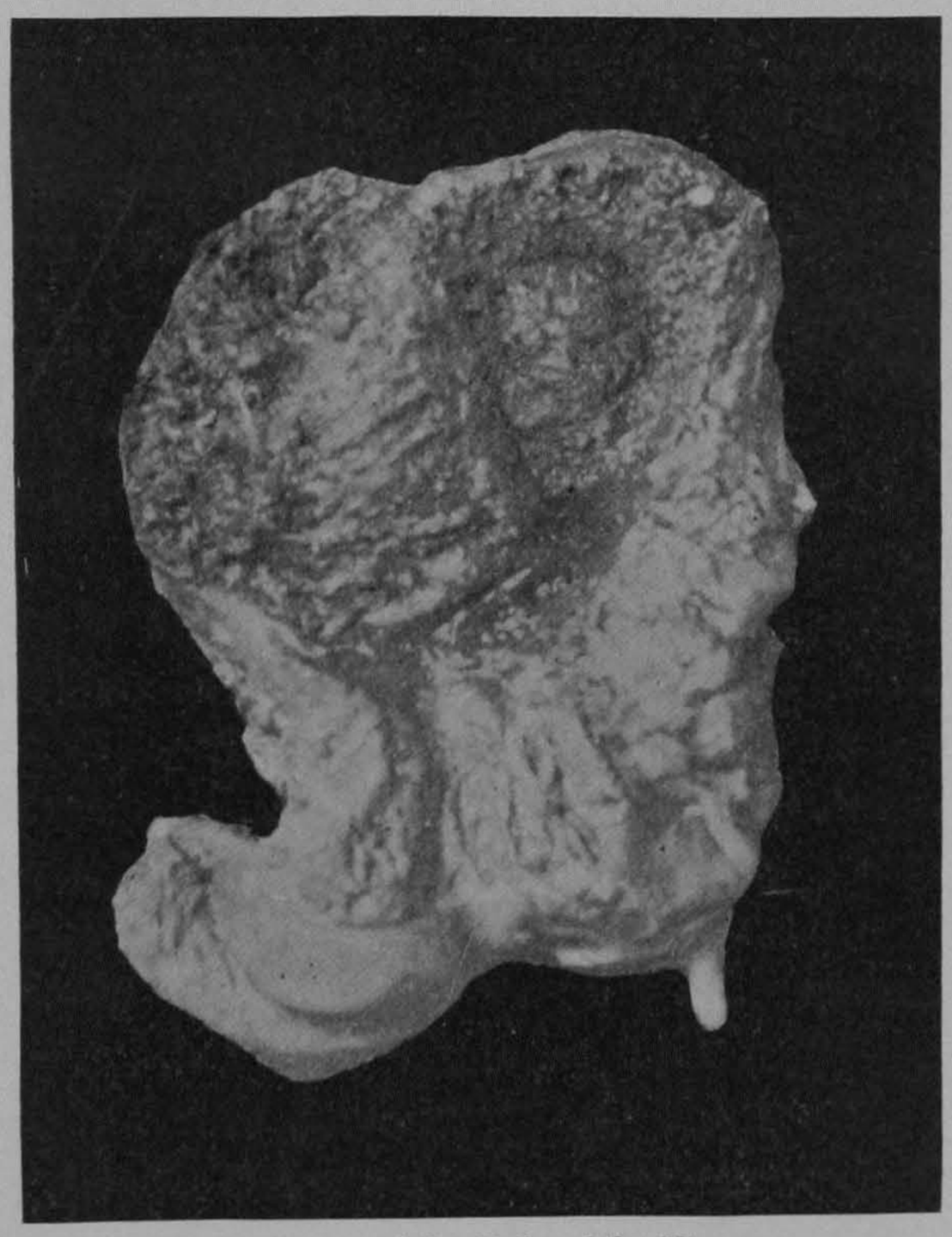
Malignant Adenoma of the Uterine Mucous Membrane, beginning glandular epithelioma.

The disease originates in the glandular element of the uterine mucous membrane, and may present itself as a polypoid degeneration of the endometrium or as a diffuse infiltration. It rapidly invades the deeper tissues, which become necrotic and are thrown off. From the rapid destruction of the uterine tissue the womb soon becomes converted into a crater-shaped carcinomatous mass. Adhesions form to the contiguous organs, and perforation may take place into the bladder and intestine or into the peritoneal cavity,

thus causing rapidly fatal peritonitis. The disease extends into the tubes and involves the ovaries. Metastatic nodules in other more remote organs are frequent.

Symptoms.—The first symptom is hemorrhage. Later on there follows a copious watery discharge which may be purulent and offensive. The discharge may be bloody-serous in character and destitute of odor, and both hemorrhage and discharge may be wanting. The secretions are more fetid when softened carcinomatous nodules become loose in the uterine cavity and are expelled from it with

Fig. 227.



Carcinoma of the Body of the Uterus.

such illustrations as this one here are of no earthly use to the student and only increase the bulk and the price of the book.

bearing-down pains. The pain differs widely as a symptom. In many cases it is wholly wanting. The pains of carcinoma of the uterine body are similar to those accompanying other uterine tumors. Lumbar and sacral pains are complained of, and frequently violent pains in one or both lower extremities. Paroxysms of pain, recurring at certain hours of the day, are characteristic of carcinoma when present, but do not always accompany the disease. They resemble the pains of uterine colic, and are occasioned by the

abnormal contents of the womb. Attempts of the womb to expel its contents occasion especially tormenting pain. Later, when the growth involves the serous covering, peritonitic pains are added.

On examination the uterus will be found uniformly enlarged. Later in the course of the disease metastatic nodules may be recognized as prominences upon its surface, or adhesions to neighboring organs render it no longer capable of being definitely outlined. The enlargement is usually not extensive, and in the earlier stages it is barely recognizable. The cervix is occasionally patulous, or is at times dilatable by the examining finger, permitting the growth to be felt in the uterine cavity and pieces to be removed. It may be hollowed out by the invasion of the disease, forming with the uterus a large cavity.

The general health usually fails late in the course of the disease. Often extensive disease is found in well-nourished women. Three times has the author successfully removed the whole womb for this disease in women who were fat, ruddy, and the pictures of perfect health. In none of these cases was pain the prominent symptom, but repeated and very persistent dribblings of blood. In one case only was the hemorrhage even alarming.

The DIAGNOSIS of cancer of the body of the uterus often presents many difficulties. Where the uterus is regularly enlarged and there are no bad-smelling discharges, the case may easily be regarded as myoma, yet the attention will be attracted in many cases to the strikingly tense distension of the uterine walls occasioned by the rapidly-growing neoplasm. This condition recalls that of hematometra.

When a uterus, at first regularly enlarged, develops upon its surface one or more knob-like projections and forms adhesions to the neighboring organs, the indications are clearly of malignant growth. The diagnosis will be made then, however, too late for radical operation.

The whole clinical course of cancer of the uterus should excite suspicion. The return of irregular hemorrhages after menstruation has ceased, often for years, should arouse the suspicion of cancer if there are no polypi in the endometrium or cancer of the cervix to account for it. The eventual occurrence of bad-smelling discharges and the perceptible increase in the size of the womb will confirm the suspicion. On the introduction of the sound the irregularly degenerated surface of the growth may be felt, and frequently the

sound, used without force, will penetrate the masses, and, indeed, perforate the womb, as happened once in our hands. These clinical symptoms in advanced cases are so clearly indicative of cancer that hardly a doubt should remain as to the diagnosis.

Microscopical examination of excised pieces should always be made. The pieces are removed at different positions of the growth with a sharp spoon. The operation is attended with neither suffering nor harm to the patient, and renders the diagnosis more certain before the corroborative symptoms of the later stages have developed, which place the patient beyond the pale of operative interference.

Cancer of the womb, from a curative point of view, must be regarded in its incipient stage, before it has progressed to fixation. In the course of its advance the lymph-glands which lie behind the peritoneum of the posterior abdominal wall, and the lymphatics at the point of attachment of the ligamentum latum upon the abdominal parietes, are the first to become affected. The palpation of these glands is extremely difficult, if not impossible. So in cancer of the uterine body it can never be determined absolutely whether the radical operation will be attended with a return of the disease or not. It can be decided only that the performance of the operation is feasible. For this reason the prognosis in cancer of the body is perhaps less favorable than in that of the cervix. Yet, on the other hand, cancer of the body of the womb is slower in attacking peri-uterine structures.

The sole TREATMENT for cancer of the womb, wherever situated, whether in the neck or the body of the womb, before infiltration of the adjoining tissues has taken place, consists in the complete removal of that organ with its ovaries and tubes by the abdominal incision or by a combined vaginal and abdominal incision. The vaginal operation is totally inadequate in the face of this disease.

In uterine cancer, if the vagina is not implicated, if the disease has not travelled along into the broad ligaments, and if the womb has not been fixed by adhesions, the immediate and remote success attending the operation of the complete removal is an extremely satisfactory one, considering the character of the disease. The averages of immediate and permanent recovery compete most successfully with those of the excision of the breast for cancer.

As regards permanent success, cancer of the breast is discovered earlier, and is therefore operated on earlier, while cancer of the womb is often not discovered until it has so far advanced as to have

insidiously implicated contiguous and continuous structures. Even when it is discovered, being seated in an unseen organ, its dangers are not realized and operative interference is liable to be postponed. Hence one would infer a larger measure of permanent success in extirpation of a mammary cancer. Yet, from our own personal experience, and from a careful statistical inquiry into the experience of others, we are thoroughly convinced that the removal of the womb for cancer far surpasses, in its remote or permanent success, not only all other operations for cancer of the womb, but also all operations for cancer in other parts of the body. Nor need we wonder at this success, because the lip, breast, penis, and rectum, which are the favorite sites for cancer, are integral parts and parcels of the body, while the womb is to the body only an appendage, which is merely suspended by stays and guys, and these of a different or mongrel tissue.

We all know how liable cancer is to return in the breast even when discovered early and the whole mammary gland has been removed. Cancer of the lip or of the penis behaves no better, while cancer of the rectum almost always returns, no matter how early or how thorough has been the extirpation of the gut. On the other hand, a careful study of the work in the hands of the principal gynecologists of the world shows a permanent recovery—after three or four years—ranging from 45 to 70 per cent. In view of these facts we are warranted—indeed, we are compelled by duty—to operate whenever we can do so safely in a case of cancer of the womb, and that by the complete extirpation of the whole womb. Every other operation aiming at the removal of only the diseased portion of the womb is a delusion and a snare.

Cancer of the Ovary.

Carcinoma of the ovary is usually secondary to a carcinoma of the womb or of some other organ. Primary ovarian cancer may occur, however, and appears to have no relation with the age of the individual. It has been observed before puberty. Usually both ovaries are involved.

Primary ovarian carcinoma appears in two forms—as a diffuse cancerous infiltration of the ovarian stroma, or as a tumor growing from the periphery of the organ.

In the first form the ovary is usually uniformly converted into a cancerous mass, preserving its form, although it may reach an enor-

mous size. Ovarian cancers of this class have been observed as large as a man's head. Rarely, several cancerous masses may form

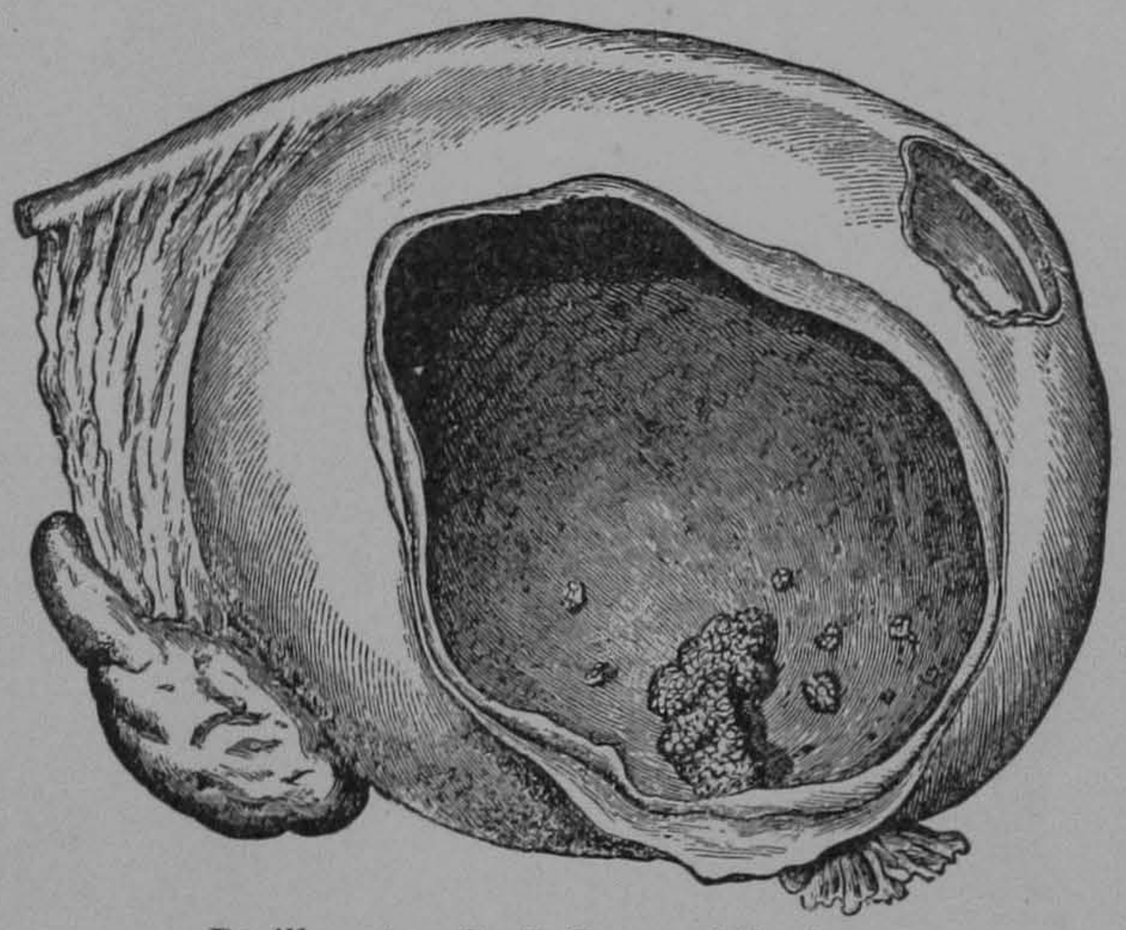
FIG. 228.

Section of an Ovary, showing its surface covered with papillomata.

in the ovarian tissue, which, growing rapidly, give rise to an irregularly shaped tumor.

In the second form of ovarian carcinoma the growth forms a cauliflower-shaped mass which projects from the surface of the

FIG. 229.



Papillomatous Cystic Tumor of the Ovary.

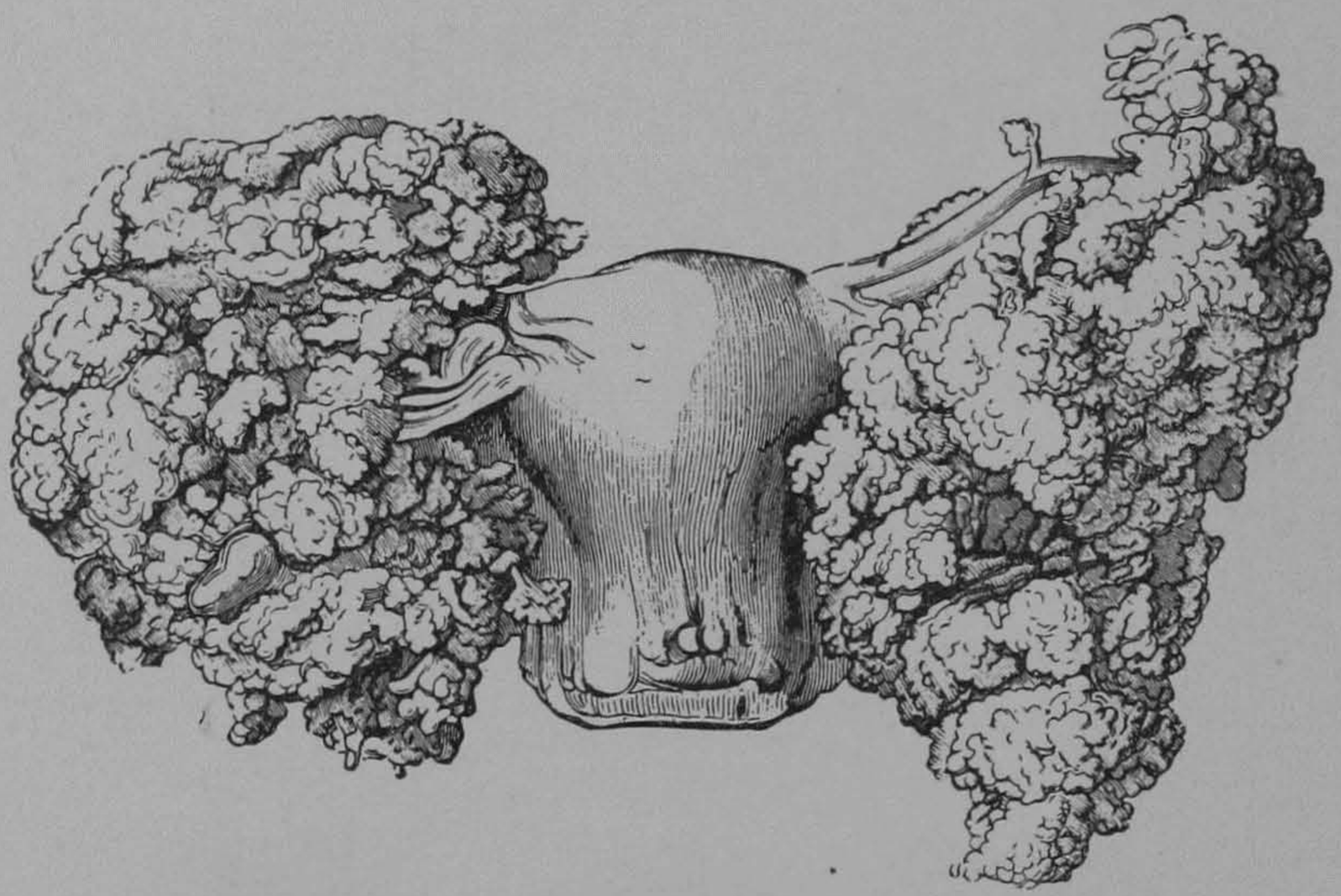
ovary. It consists of a papillary proliferation rich in blood-vessels and covered with cylinder epithelium. This form of carcinoma of the ovary leads early to ascites and to the infection of the peritoneum.

Of much more frequent occurrence is the cancerous degeneration of cystomata of the ovary. These appear either as the epitheliomatous form, having its origin in the papillary proliferation of a cystoma, rapidly leading to infection of the peritoneum and to

ascites, or as a pure glandular type of carcinoma forming in the tissue of the ovarian cystoma.

The ovarian carcinoma soon excites profuse ascites and chronic peritonitis from its irritation of the peritoneum. It spreads rapidly by circumscribed nodular formation to the neighboring organs, and through the broad ligament to the pelvic connective tissue. It may

FIG. 230.



Papillomatous Disease of the Broad Ligaments, completely hiding the appendages.

perforate the covering tissues of the ovary, and proliferate, fungus-like, in the cavity of the pelvis. The epitheliomata infect the peritoneum much earlier.

The primary symptoms do not differ from those of benign enlargements of the ovary. The tumor grows, however, more rapidly. Symptoms of chronic peritonitis exist. A symptom of much diagnostic importance is the early œdema of the feet and ankles from pressure upon the great vessels of the pelvis. The condition of the patient continues to grow worse until death occurs from peritonitis, marasmus, stricture of the bowel, or from uremia.

The marked distension of the abdomen from ascitic fluid usually first causes the patient to seek advice. Soft, compressible masses in Douglas's pouch may then be felt. It is usually necessary to draw off the ascitic fluid by a small median incision or by tapping in order to make an absolutely certain diagnosis. The relaxed abdominal walls then permit an easy examination of the pelvic organs, and the irregularly-enlarged ovary or cauliflower-growth may be

clearly detected, if the process has not progressed so far as to involve the entire pelvis and render the ovary a highly probable point of origin. An important point in the differentiation between this and a benign ovarian tumor lies in the progressive and steady loss of flesh and strength. This, together with the ascites and the rapidity of the growth, generally renders the diagnosis almost certain. Pain is not a prominent symptom of this disease.

The TREATMENT instituted depends upon whether secondary involvement of the peritoneum has taken place. If this has not occurred, ovariotomy should be performed at once. Frequently, after opening the abdomen, the operator will find, to his disappointment, the impossibility of complete removal. If the infiltrated base of the growth is to be felt extending into the pelvic cellular tissue, or nodules are found in Douglas's cul-de-sac, the operation should be abandoned, as attempts at removal of the growth would only hasten the end.

SARCOMA OF THE OVARY.

Sarcoma of the ovary is of rare occurrence. It is usually of the spindle-cell variety and affects both ovaries. It has been observed

FIG. 231.

Sarcoma of both Ovaries.

in girls eight years of age. The growth develops from connective tissue of the ovarian stroma, which normally contains short spindle-

shaped cells. Sarcomatous tissue is frequently found in dermoid cysts, and growths resembling sarcoma microscopically often follow their removal. The spindle-cell ovarian sarcoma is attended with considerable vascular development, which gives the growth a cavernous appearance. The Graafian follicles may become dropsical, and, increasing rapidly in size, produce a cystic complication of the sarcoma.

The sarcomatous tumor preserves the shape of the ovary, and may reach a considerable size. Tumors of this kind have been reported weighing eighty pounds.

The DIAGNOSIS is difficult. A large solid ovarian tumor is easily recognized. Such a growth is probably sarcomatous if of rapid growth, possessing a smooth surface, and attended with ascites, especially if the patient be young and both ovaries be tumefied. Progressive loss of strength and flesh, with or without pain, is of great significance.

There are practically but two solid tumors of the ovary, fibroid and malignant; fibroid growths of the ovary are exceedingly rare. The presumption in the case of a solid tumor of this organ is therefore in favor of malignancy.

The TREATMENT is wholly surgical. Sarcomata of the ovary do not rapidly involve the neighboring tissues, nor do they give rise to early metastasis. After removal they are not so prone to return as the carcinomata. Still, one is not sure of complete cure by extirpation even in the most favorably appearing cases. The author has had perfect cures from the removal of the cyst; then, again, he has seen the disease return very soon; but in one case it did not return for five years, during which time the woman enjoyed good health.