

part. The condition most likely to give rise to error is hypertrophy of the follicles of the os uteri from occlusion. This condition produces small nodular projections, the centres of angry, vivid congestion. They differ from commencing cancer, in showing a whitish translucent centre, due to the retained mucous secretion; and in being curable by puncture. But it sometimes takes time for observation before a sure diagnosis can be formed. Perhaps the best training for the eye to the recognition of early cancer of the os uteri is obtained by the observation of the appearance of commencing cancer at the mucous outlets of the body, for example at the vulva, anus, mouth, nose, and eyes.

When cancer has spread from the vaginal-portion to the roof of the vagina, the cellular tissue between the cervix and bladder to the broad ligaments, the uterus will almost necessarily be set fast. The primary disease of the cervix will be partly obscured by the secondary surrounding disease. It is in this condition chiefly liable to be mistaken for perimetritic inflammation and inflammatory deposits. An important distinction, often available, lies in this: in cancer the disease is *in* the cervix itself; in perimetritis it is *around* the cervix. Some cases of fibroid tumors distorting the cervix, and fixing the uterus in the pelvis, may give rise to error.

In both cases the vaginal-portion is commonly brought down into a lower plane; it is more easily reached. But it is especially in advanced cancer that the diseased mass is often carried so low down that the finger scarcely penetrating the vulva strikes at once upon it. And there are other points of distinction. By the time that the uterus is set fast by cancer, other characteristics are usually pronounced, as hemorrhage, foul discharges, pain. Perimetritic inflammation, too, has a different history; it dates from an epoch pretty clearly defined, beginning with labor, abortion, or menstruation.

Foul-smelling, irritating discharge occasions great anxiety, because it is a popular belief that these characters are peculiar to malignant disease. But they are, in truth, acquired by the retention of discharges in the vagina.

When cancer begins in the body of the uterus, the mobility of the organ may not be interfered with until very late in the course of the disease. It may be mistaken for endometritis, with or without sub-involution; for hypertrophy with engorgement; for fibroid or other non-malignant tumors, especially those of the sub-mucous or polypoid kind. One point of distinction, sometimes available, consists in the origin of the disease. Fibroid tumors begin in the muscular wall of the uterus, cancer more often on the mucous surface.

A feature valuable in the diagnosis of intra-uterine cancer is the following: The morbid tissue projecting into the cavity shortens it, so that the sound may penetrate two inches only, or less; at the same time the walls become incapable of collapse, they remain rigid, are kept apart, forming a spherical hollow, rough inside. When we get this condition we may conclude that the disease has laid hold of the walls of the uterus, altering their physical property, destroying contractility. This is one cause of congestion and bleeding. If the uterine walls are felt yielding, if the anterior wall can be flattened upon the posterior, there is rarely

cancer of the body of the uterus. Chronic metritis may induce a somewhat similar condition, but it will be less marked than that produced by cancer.

Pain is usually more intense, and comes on earlier in the cases where cancer invades the body of the uterus. This pain is, to a certain extent, diagnostic. Metritis and non-malignant tumors are not usually attended by pain so agonizing or so unremitting. But still even this symptom is not constant. For example, I saw in consultation with Dr. Byass and Dr. Saunders a lady, aged about fifty, a pluripara, who had ceased menstruating for two years. For three years she had been subject to constant sero-sanguineous discharge, and her health had become impaired. I found the vaginal-portion of normal size, os closed; the uterus was movable, and its body was enlarged, firm, regular in form. The diagnosis was entered interrogatively as intra-uterine polypus, fibroid or malignant disease of the body of the uterus. I recommended dilatation by tents to explore the interior. Four months after this she died, and Dr. Saunders sent me the following account: "It turned out to be encephaloid cancer of the body of the womb. The following circumstances are remarkable: its duration of nearly four years; the absence of any intense pain; the absence of hemorrhage, the only discharge being considerable quantities of blood-stained serum of offensive odor, and this suddenly stopped about a month before death; the perfect integrity of the os up to the very last, there being slight thickening, and its contractile power retained. At the post-mortem the whole of the fundus uteri was in a broken-down condition, exhibiting the signs of encephaloid, the microscope subsequently verifying them. The patient died from asthma, there being hardly any prominent signs of the disease up to the last. I diagnosed, however, from the general cachexia and increasing weakness without an explainable cause. There were no secondary deposits in other organs; the liver was, however, in a state of amyloid degeneration." Pain is due partly to the stretching of the muscular fibre, partly to the contractile efforts aroused by the parasitic growth, partly by the pressure of the enlarged uterus upon surrounding structures, partly to the invasion of surrounding structures by the disease, and partly by the nerves themselves being affected by it. In some cases reflex irritation produces pain in distant parts, and vomiting is not infrequent, especially in the advanced stages.

After lasting some time, the cervical canal will commonly undergo some dilatation.

But the surest test of intra-uterine cancer is to bring away small fragments of the superficial projections from the cavity, and subject them to microscopical examination. In describing endometritis, we have seen that there are cases in which small pisiform excrescences exist, whose nature, or rather whose history, is for a time a source of doubt. In endometritis or metritis not complicated with cancer, the walls of the uterus are less rigid.

This preliminary dilatation of the cervix may be effected by tents. This dilatation will also permit of digital exploration. Then Sims's curette may be introduced and a shred easily scraped off. The patient under chloroform, the hand may, if necessary, be passed into the vagina, the finger will then easily survey the interior of the uterus, and recognize

the pulpy projections of malignant disease. Thus dilatation effected for diagnosis is useful for treatment.

As a guide to treatment, as well as to prognosis, it is important to distinguish the *kind* of malignant disease. Thus outbreaks of cancerous disease are comparatively frequently met with in neighboring glands, or in remote viscera. This furnishes a strong argument against hasty operative interference with a view to extirpating the disease. These secondary foci being greatly more common with true cancer than with epithelioma, the microscopic examination of the morbid structure becomes of great importance in determining on a line of treatment.

"The scrofulous ulcerations are almost always accompanied by considerable engorgement of the cervix uteri." On the other hand, under the microscope, the softened matter is found not to consist of the elements of tubercle, but of epithelial cells similar to those of the uterine mucous membrane, while the indurated callous structure which forms the base of the ulcer is formed of a mixture of fibro-plastic and epidermoid materials. Robin says this kind of ulcer is to the uterus what lupus or canceroid ulcers are to the face.

The *prognosis* may in general terms be said to be settled when the diagnosis is determined. It is henceforth limited to the questions, How long will the patient survive? In what manner and to what degree will she suffer? Of course, if we adopt the more hopeful doctrine that at the initial stages the disease is a local one, the prognosis will be favorable in cases where the diagnosis is formed, whilst the disease appears to be isolated in the vaginal-portion in such a manner as to admit of complete amputation or destruction. But it is precisely in these cases that diagnosis is liable to be fallacious; and erroneous diagnosis will vitiate the prognosis.

What is the *duration* of cancer of the uterus? As the early stages so often escape detection, it is not easy to determine the total duration. It is probable that the stage before ulceration, of limitation to the cervix, may last for some months, even two or three years. When ulceration has begun, the downhill course is often rapid.

Prognosis will be affected by treatment. For example, if the disease be allowed to run its course uninterrupted, the fatal termination will in many cases come at an earlier date than in those cases where judicious surgical treatment has been adopted. It is very difficult to set out this comparative statement in figures. But a comparison of cases seems to justify certain deductions. Thus we take two cases of cauliflower excrescences, apparently chiefly limited to the vaginal-portion, and amputate as far as we can the diseased mass in the one case, and avoid surgical treatment in the other. We may pretty confidently predict that in the second case hemorrhage, watery discharges, and general infection will destroy the patient in a few months. We may with equal confidence predict that, if the diseased mass be fairly removed, the destructive processes will be arrested for a time, and that the patient's life will be prolonged. I have known a patient recover so far that she and her friends believed recovery to be complete; she became pregnant three months after operation, and was delivered by artificial induction of labor at the end of eight months' gestation. At this time there was return of the disease,

but her general health was good. At the time of the operation she was so reduced by hemorrhages, and the disease was so progressive, that it seemed highly probable that she would sink within three months.

So in some cases of superficial malignant disease, whether of the cervix uteri or of the interior of the body of the uterus, the removal or alteration of the diseased surface by actual cautery, by nitric, chromic, or acetic acid, by iodine, bromine, or by scraping, has stopped bleeding and decomposition, and thus cut off a source of blood-infection. Patients so treated have improved considerably, and it cannot be doubted have had their lives prolonged, and made for a time more endurable.

In not a few cases of epithelioma in which no decided local treatment has been employed, life has been prolonged several years after the disease has been recognized; and we have no means of estimating how long it had existed before recognition. In cases of this kind the disease is not uniformly progressive. It seems to proceed by stages with intervals of halt. For a time, seldom indeed very protracted, the disease may even appear to be so completely arrested that the patient is tempted to accept the reprieve as a promise of cure. If one of these delusive halts coincide with a new treatment, especially if backed up by the bold assurances of a "cancer-curer," she eagerly interprets all things according to her wishes, and builds up upon this transitory foundation the most confident hope of recovery.

These alternations of progress and arrest suggest another reflection which it is very important to bear in mind when we are called upon to pronounce a prognosis. If we express an adverse opinion without such qualification as the uncertain march of the disease demands; if, straightway, on forming a diagnosis of cancer, we declare the nature of the disease and venture to foretell a brief duration of life, especially if we assign a specified limit, we commit a twofold error. One error inflicts needless misery on the patient, the other falls back with not undeserved retaliation upon ourselves. To utter the word "cancer," and to say the sufferer has only a short time to live, is literally to pronounce sentence of death unmitigated by the hope of reprieve. Such a sentence, whenever it comes, even after long and advancing disease, even after sufferings to escape from which death may have been often silently invoked, falls like a crushing blow, adding to physical torture the agony of despair.

Cancer differs in this respect from phthisis in its effect upon the mind. The buoyant hope that to the last so often sustains the subject of phthisis, that flatters him with the belief that the doctors are mistaken in his case, that there is nothing serious in it, has little or no place in cancer. It may be confidently said that, whereas many persons struck with incurable phthisis, refuse to believe in this reality, few or no persons struck with cancer long indulge in such a dream. Many who have no sign of cancer are ready to believe that they are suffering from the disease; few or none who are really suffering from it fail to recognize their condition. And this they will do, although the physician may never have uttered the word.

The error that rebounds upon the physician who is too hasty to condemn is this: Not long after he has passed sentence the patient unex-

pectedly improves, or thinks she does; one of those delusive halts is reached, and "another opinion," possibly less skilled and less honest than his own, encourages the welcome belief. For the time he is discredited; to the patient's own injury probably he is discarded. And when at length the inexorable disease resumes its fatal course, he will hardly be forgiven. And as an additional caution against an absolute and uncompromising condemnation, humility should suggest the possibility of error in diagnosis.

The proper course in framing an opinion, one dictated by truthfulness, the first law, by the modesty which is conscious of fallibility, and tempered by mercy, is to explain that the case is only to a certain extent amenable to treatment, that, whilst some improvement may be expected, it is likely to be temporary only, and that the usual course of the disease when once established is to shorten life. The patient will almost invariably draw the true significance from such expressions. She will believe that she has cancer. But she will be grateful for having been spared the cruel word.

The *treatment* may most conveniently be discussed under the leading heads of *curative* and *palliative*. The first question which always challenges attention is that of curability. In the great majority of cases when first seen, unhappily, this is quickly answered in the negative. The disease has gone too far, or it has assumed a form which precludes the idea of removing it. But in a certain number of cases, the disease is sufficiently isolated in the vaginal-portion to justify the attempt; and in some cases of epithelioma of the cavity of the uterus, where the disease is ascertained to be superficial, an attempt to remove or destroy the diseased surface may also be made. The epithelioma or cauliflower excrescence of the vaginal-portion offers the best prospect of cure by amputation. The best test of the fitness for amputation, I think, is the freedom in mobility of the uterus. Amputation was at one time a mode of dealing with cancer of the uterus much in vogue. But it would be useless to invoke the experiences of the past generation of surgeons as to the efficacy of their practice, because error of diagnosis vitiates it to an unknown extent.

The following historical account is from Samuel Cooper:—

"According to Baudelocque, the excision of the cervix uteri was first suggested in 1780, by Lauvariot. M. Tarral even ascribes it to Tulpius; but the tumors which the latter took away were, according to M. Velpeau, evidently polypi. Lazzari, who puts in a claim for Monteggia, is also believed to have made a similar mistake; nor has M. Velpeau been able to satisfy himself that the operation was ever performed by André-la-Croix and Lapeyronie, as M. Tarral represents. Troisberg recommended it, however, in 1787; and, as a critical writer observes, sometimes the cervix uteri was removed accidentally with the knife by ignorant persons, who mistook it for a polypus. (See *Edin. Med. and Surg. Journ.*, No. 103, p. 377.) Professor Osiander, of Göttingen, first executed the operation in 1801, on a widow, whose vagina was filled by a very vascular fetid fungus, as large as a child's head, growing from the orifice of the womb. By means of Smellie's forceps, the fungus was drawn down; but it broke off, and a tremendous hemorrhage ensued.

The operator, without loss of time, introduced several crooked needles, armed with strong ligatures, through the bottom of the vagina, and body of the uterus, until they emerged at the os tinæ. These ligatures served to draw down the uterus, and retain it near the mouth of the vagina. Osiander then introduced a bistoury above the scirrhus portion, and divided the uterus exactly in the horizontal direction: for an instant the bleeding was profuse, but it was quickly stopped by means of a sponge, saturated with styptics. In about a month the woman recovered. Osiander afterwards performed eight similar operations upon different patients, all of whom are reported to have experienced a cure. The observations of Osiander were no sooner promulgated in France, than M. Dupuytren adopted the new operation, and made numerous trials of it. M. Récamier followed Dupuytren; so that, by 1815, the excision of the cervix uteri had become in France a common operation. However, it remained for M. Lisfranc to extend the practice, and to convince the most incredulous of the little danger resulting from it. (M. Velpeau, *Nouv. Elém. de Méd. Opér.*, t. iii. p. 615.) Dupuytren also performed the operation eight times; but, instead of employing the ligatures and knife, as Osiander did, he drew down the uterus with hook forceps, and divided it above the scirrhus part with curved knives and scissors. One of the patients, on whom Dupuytren operated, had a return of the disease, and submitted to a second operation with no better result; but was afterwards effectually cured by the application of caustic, with the aid of the speculum invented by M. Récamier.

"Even with regard to the excision of the cervix uteri, it is perfectly manifest to me that many of the cases in which it was performed were not truly cancerous. Doubts may be entertained, I think, whether the enormous tumor removed in the very first instance of such operation by Osiander was really a cancerous affection."

In Guy's Museum is a preparation (No. 2259<sup>20</sup>) of the vagina, bladder, rectum, and part of the colon of a woman, from whom Dr. Blundell a year before death had removed the whole uterus for cancer; disease invaded rectum, vagina, etc., which proved fatal, but complete union had taken place between the pelvic organs.

Dr. Wiltshire has recorded (*Brit. Med. Journ.*, 1873) a case in which the entire uterus was accidentally brought away or sloughed off after an operation, which consisted in scraping the diseased surface. Some cicatrization of the vaginal roof took place, but the disease returned.

The question of *total extirpation of the uterus* is one that scarcely admits of discussion. The circumstances under which it can be seriously contemplated must be very rare. West gives a table of recorded cases of total extirpation of the uterus on account of cancerous disease. In three only did the patient survive the operation, and that only for a month; in twenty-two death was the consequence.

*The Selection of Cases for Amputation of the Vaginal-portion.*—There is one class of cases in which there should be no hesitation in operating. Just as the surgeon recognizes the propriety of amputating the breast when the tumor is clearly circumscribed, movable, and no evidence of glandular or constitutional infection can be traced, so should he when similar conditions are found in connection with cancer of the uterus.

If, then, we find the uterus freely movable, a distinct neck above the diseased portion, so that we can work beyond the disease in sound tissue, and especially if the disease is ascertained by microscope to be epitheliomatous or canceroid, it is our duty to amputate. This should be done whether profuse bleedings occur or not. The plain course is to anticipate the evils which will certainly come if we leave things alone. Complete cure is not hopeless; and a long respite may be confidently looked for.

In another class of cases the indication, although not so urgent is still clear. I refer to those cases in which a certain degree of mobility of the uterus remains, but in which the base of the disease has caught the roof of the vagina, so that no distinct neck or demarcation between healthy and diseased tissue can be made out. If a cauliflower-growth be found under such conditions, and be the source of hemorrhagic and other discharges, the ablation of so much of the diseased mass as can well be surrounded by a wire should be attempted. For a time, at least, the disease will be stayed. And there is little drawback in the shape of danger from the operation to deter from its performance. Where the vaginal-portion is attacked by medullary cancer, whilst in the stage of localization, especially in the mushroom form, the uterus being still movable, amputation should be performed.

The fixing of the uterus being generally due to the extension of the disease to the roof of the vagina, the base of the bladder, and the broad ligaments, is evidence that it has passed the boundary where it can be reached by topical remedies. This fixing is also, I think, in many cases evidence that the disease has invaded the lymphatic vessels and glands, a still further discouragement from resort to severe surgical treatment.

When the operation is determined upon, we have to consider the best mode of performing it. If we use the knife or scissors, especial care must be taken to avoid opening the roof of the vagina behind, and perforating the retro-uterine peritoneal pouch. To obviate this accident which might be fatal, the vaginal-portion of the uterus must be carefully isolated from the vagina. Dr. Emmet (*Amer. Journ. of Obstetrics*, 1869) recommends before amputating to examine whilst the patient is placed on her knees and elbows. This, by favoring gravitation, enables us to note the length of the neck more accurately, since, in the ordinary posture the neck is always apparently longer from prolapse of the uterus.

But since it is almost indispensable to the use of the knife or scissors that the whole uterus be brought low down near the vulva, there must always be danger of drawing down the roof of the vagina and the retro-uterine peritoneal pouch with it. And in pursuance of the object to divide the cervix as high as possible in order to get into sound tissue, the danger of opening this pouch is serious. It constitutes an important objection to this mode of operating. The objection applies also to the chain-écraseur, which is very apt to drag in the peritoneal pouch. It applies in a minor degree to the single-wire-écraseur. But the galvano-caustic wire is almost wholly free from this objection. The knife and scissors, and the single wire, further entail serious danger from hemorrhage. To arrest this it may be possible to transfix the stump with a curved needle carrying a silver wire. But the best way is to use the actual cautery.

Copper or iron cauteries should always be ready when this operation is undertaken.

*The Operation of Amputating the Vaginal-portion of the Uterus affected with Malignant Disease.*—By far the best plan is to use the galvano-caustic wire. The patient is placed under chloroform in lithotomy position. Sims's speculum is introduced to keep well back the perineum and posterior wall of the vagina. An assistant on either side holds open the lateral and interior walls of the vagina by small retractors. The diseased mass thus well exposed is seized as far back as possible with a vulsellum, taking care not to tear through the fragile structure. The mass thus brought forward near the vulva partly by gentle traction, but more by the firm pressure of an assistant's hand upon the fundus uteri applied above the symphysis pubis, is then encircled by the cold platinum-wire loop passed over the vulsellum. The loop is then accurately adjusted by the finger close to the base of the mass, and therefore close to the roof of the vagina. The slack of the wire is then drawn in, so that the loop, tightly embracing the root of the mass, buries itself in a groove all around. The heat now being turned on burns at once into the part to be removed, leaving the vagina quite secure. The loop is gradually screwed up as the burning proceeds. There should be no hurry in this proceeding. The wire being fine is rapidly cooled by the tissues; it must have time to renew its heat, so that the substance is *burnt through, not cut by over-tightening the loop*. This slow process gives more effectual security against hemorrhage, and the more thorough burning of the surface also destroys more effectually the remains of the disease in the stump. When the wire has burnt its way through, the diseased mass is removed by the vulsellum, and the stump is carefully examined. A series of concentric rings mark the alternate incandescent and cooler states of the wire in its progress. The bleeding is generally arterial; one or more fine spirts may be seen. These I have always succeeded in staunching by the actual cautery applied by the galvanic porcelain button. Light swabbing with small bits of sponge soaked in iced water will facilitate the search for bleeding points. And it is well to syringe out the vagina by playing a stream of iced water against the stump. All bleeding stopped, the vagina should be firmly, not tightly, packed with strips of lint soaked in carbolic oil.

It is sometimes more convenient to place the patient in the semi-prone posture. The wire may be adjusted round the base of the tumor by the finger without the aid of speculum or retractors. We are kept informed of the progressive action of the cautery by hearing the hissing sound it produces, and applying light gradual traction upon the loop whilst there is resistance. When the resistance ceases and the wire-loop comes home we know the tumor is severed. It is then removed by finger or vulsellum, and the duck-bill speculum is introduced to obtain a full view of the stump and enable the operator to staunch any bleeding.

The after-dangers are: hemorrhage and retention of urine. The first may be arrested for a time by further plugging. If this fail, all plugs should be removed, and the stump swabbed with perchloride or persulphate of iron. If this fail, the patient must be placed in lithotomy posi-

tion, the part exposed by Sims's speculum, and the bleeding points or surface seared with the actual cautery.

The carbolic oil dressing may be removed next day, and a single strip of lint soaked in the same fluid may be renewed daily for a week. After this, washing out with Condy's fluid, or weak chloride of soda, will be useful. The surface will granulate and may cicatrize in two or three weeks. The os uteri should be watched, the sound being occasionally passed to obviate cicatricial closure. It would be better to abstain henceforth from sexual intercourse. I have known pregnancy to occur after the operation.

The stump, or granulating surface, may be sprinkled every three or four days with powdered sulphate of zinc; or if any sprouting of malignant excrescence show itself, it may be kept down by nitric acid or chromic acid.

As already stated, amputation is sometimes advisable even when there is no reasonable hope that the operation will be curative. It is quite justified in some cases where the disease has extended beyond the vaginal-portion, on the principle sanctioned by experience, that much good is effected by removing the most active portion of the disease.

The proceeding next in order to ablation by wire or cautery, is *scraping*. This may be practised by Récamier's or Sims's curette, or by special instruments designed by Simon. It is more especially applicable to cases where the diseased mass is not so far isolated or raised above the level as to admit of surrounding by a wire, and yet where the morbid surface is rough, foul, easily bleeding. The scraping is performed by decided strokes, so as to scrape off the superficial layers. Sometimes the bleeding stops by this treatment. But on the other hand, it is sometimes increased. I never resort to it without having at hand an iron or copper cautery or Paquelin's apparatus to sear the surface afterwards; and in the greater number of cases the actual cautery is better used alone.

Amputation of the diseased part is not the only method which has been proposed and practised with the view of curing cancer. As in the case of cancer of the breast various caustics have been employed—as the chloride of zinc, Vienna paste, and others. (See Cooper's *Surgical Dictionary*.) Their use with the view of destroying the diseased mass is now, I believe, generally abandoned. But quite recently attempts to effect a radical cure by acting upon the cancerous growth have been made on a somewhat different principle. Bromine in solution has been recommended by Dr. Wynn Williams and Dr. Routh to be applied on pledgets of lint to the diseased surface. In some cases it has appeared to check the disease by destroying the vitality of the cancer-cell. I have used it extensively, and have acquired the impression that disease is checked by it. And there is no doubt that it is most effective as a deodorant. Dr. Broadbent (1866) recommended acetic acid on the following reasoning: "Cancer owes its malignancy to its characteristic structure. . . . To alter its cells is to put an end to their power of dividing and multiplying, and consequently to arrest the growth of the tumor. In acetic acid we have an agent which on the microscopic slide rapidly effects important changes in cells of every kind, dissolving the cell-wall and affecting the nucleus. Not coagulating albumen, it may diffuse itself

through a tumor, and, reaching every part equally, it may probably produce similar results when the cells are *in situ*." He injects equal parts of acetic acid and water. I do not know how far this proposal has borne the test of clinical experience. But it seems that a hope of controlling this hitherto intractable disease may be found in its further pursuit. In one case in which I repeated the application several times, phlegmasia dolens supervened. The patient died. Dr. Skene (*Amer. Journ. of Obstet.*, 1869) inserted arrows of chloride of zinc into a presumed cancerous affection of the cervix uteri; recovery resulted.

More lately chromic acid, nitric acid, and strong bromine have been used, more with the object of improving the superficial condition of the diseased surface, and of retarding the march of the disease, than with the hope of cure.

The strong disposition to thrombosis in the pelvic veins in cancer must be considered in dealing with cases of this disease. The process may be started by the remedies employed, and thus the fatal issue may be precipitated. The actual cautery, and sulphuric acid, chromic acid, perchloride of iron, may easily cause coagulation of the blood in the vessels near the surface where they are applied, and the thrombi so formed may spread backwards. The rule for this application may, I think, be laid down as follows: If our hope is to cure or materially arrest the disease, the cauterizing agent must be applied boldly to the disease, so as to cause a slough of some depth. Now this cannot be done safely if the disease is not limited to the cervix or the lower part of the uterus. If the uterus still retain its mobility we have a reasonable assurance that the disease has not invaded the connective-tissue and vessels in the broad ligaments around the cervix. Under these conditions the caustics may be freely applied. But if the disease have extended high up in the cervix it will not be judicious to apply the cauteries named so freely as in the first order of cases. There is, however, another indication for the use of powerful cauteries—namely, to arrest profuse hemorrhage and to alter the character of the discharges. This may commonly be most effectually done by a superficial application of strong chromic acid, nitric acid, or perchloride of iron, or the actual cautery. The bleeding is quickly controlled; and a thin slough is formed which, when thrown off, leaves a comparatively healthy granulating surface, from which for a time the discharge is not offensive. Considerable constitutional improvement often attends the local change.

Mr. Campbell de Morgan says,<sup>1</sup> in reference to the caustic treatment of cancer, there is an evil attending slow cauterization, namely, that while the caustic is doing its work increased action is going on in its neighborhood, with augmented growth of that part of the cancer which the caustic has not yet reached. If the whole diseased structure be not included in one operation, the chances are that the undestroyed tissue will grow with greater rapidity, and quickly affect distant parts. Still, in many cases the method by gradual cauterization is safe and effective. He, however, urges it as an absolute rule that if caustics are employed with a curative intention, they must be used fully and decisively.

<sup>1</sup> The Origin of Cancer considered with Reference to the Treatment of the Disease. 1872.

Latterly Dr. Routh has advocated the topical use of *pepsine*. Two successful cases had been published by Drs. Tansini and Pagello (*Gazetta Med. Lomb.*, 1869). Dr. Routh employs this agent in the following way: He first destroys the surface of the morbid growth by the actual cautery, by scraping, by bromine, or other agents. A raw surface thus obtained, or even whilst the slough still remains, he applies the gastric juice on a piece of lint, by help of a speculum. This is covered by a piece of oil-silk, and supported by a plug. This should be done twice a day, oftener if practicable. The digestive property of the pepsine acts powerfully upon the morbid structure. He reports cases in which decided benefit, even cure resulted. Of course the objection has been raised that the cases were not cancer. But the proper course, it appears to me, is to pursue the treatment in cases whose nature is not doubtful. I have seen one case treated in this way. I was satisfied that the solvent and antiseptic action of the remedy upon the diseased surface was great and beneficial. All objections of a theoretical kind must ultimately fall before the evidence of clinical experience. But we should remember that pepsine does not act upon the structure of the living stomach; that it only acts vigorously on dead tissue. At one of the first meetings of the Pathological Society I exhibited the stomach of a woman, a great part of which had been dissolved after death by its own gastric juice. John Hunter's observations on this subject are well known. In its application to cancerous growths, as advised by Dr. Routh, a slough is first formed. This will be easily dealt with by the pepsine. But further observations are desirable to try how far the pepsine can be made to act upon the deeper parts of the living morbid substance.

I do not refer to the use of arsenic in this connection, on account of the danger there is of poisoning the system when applied in quantity sufficient to do any local good to an ulcerating absorbing surface.

In the case of sarcoma beginning in the body of the uterus, if we have the opportunity of recognizing the disease in its early stage whilst limited to the lining membrane, caustics may be applied decisively, the cervix uteri having been previously dilated to allow this to be done. But this form of malignant disease also tends to advance into the cervix attacking the region where the vessels enter. When it has reached this point, and especially if any marked amount of fixing of the uterus exist, cauteries should no longer be applied with that degree of severity which is indicated when their curative agency is looked for.

The mode of proceeding in dealing with intra-uterine cancer is, 1st, to dilate the cervix with one or more laminaria-tents; 2dly, having ascertained the form which the disease assumes, we proceed, if there are projecting masses more or less polypoid, to shave them off by the wire-écraseur, and to cauterize the surface afterwards with the actual cautery or nitric acid, or if there are small excrescences to scrape them off with Sims's or Récamier's curette, applying nitric acid afterwards.

The actual cautery may be applied by an iron or copper olive-cautery through the cervix, held well open by tenacula. But this is difficult to accomplish without burning the cervical canal in transit. The porcelain olive of the galvanic apparatus is decidedly superior. It can be introduced whilst cold to the very spot we want to cauterize; and the heat

being turned on and off at will, its action can be defined with absolute precision.

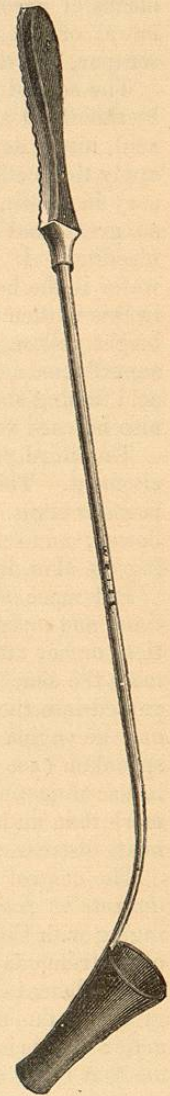
To apply nitric acid, we insert a tube like Atthill's into the cervix to serve as a sheath or canula, through which a rod carrying cotton-wool steeped in the acid is passed. I have devised a funnel-shaped tube (Fig. 175), mounted on a stem for this purpose, which I find more convenient than Atthill's. I use a Sims's duck-bill speculum in the ordinary way; then the cervical tube is passed into its place, and the stem and handle keep back the anterior wall of the vagina, affording ready access to the uterus. The instrument has also the advantage of being easily withdrawn. The nitric acid swab should be pressed firmly down upon the inner surface of the uterus, so as to insure decided action upon the morbid surface. It is often more convenient to apply nitric acid to the uterine cavity by the aid of the catheter (Fig. 52, p. 155). In this way the acid is carried through the cervix without touching this part, and is squeezed out into the uterine cavity. The action of the acid is superficial. There is no reason to apprehend danger from its use.

The palliative treatment of cancer consists in controlling pain, hemorrhage, and offensive discharges; in mitigating the distress produced by the extension of the disease to neighboring organs, especially the bladder and rectum; and in meeting, as best we may, the constitutional deterioration.

Pain becomes especially exhaustive in the latter stages. We must have recourse to opium in its varied forms, in pill, draught, suppository, vaginal pessary, subcutaneous injection; to conium, belladonna, Indian hemp, chloral, and the other known narcotics and sedatives. The local application of sedatives has been extensively tried by Simpson. He played streams of carbonic acid, and of chloroform vapor upon the diseased parts. In some cases benefit resulted, but the difficulty is great in sustaining the action of these remedies. The effect is but temporary. The application of cold by ice or freezing mixtures was at one time urged by Dr. James Arnott, in the belief that it was even curative by killing the diseased tissue. I have tried the application of cold by means of the ether-spray in several cases. It produced such suffering that I have abandoned it.

The necessity of restraining hemorrhage when profuse becomes urgent. Patients, however, often affirm that they have felt material relief after an attack. No doubt local congestion is relieved by it, and the habit of free bleeding is commonly attended by a habit or capacity for making blood with rapidity. But we never know that bleeding will not exceed

FIG. 175.



Intra-Uterine Speculum (half size).  
(R. B.)