

Senn N. The Early History of Vaginal Hysterectomy.
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York, in 1880, with an attendance of about forty members. At this first meeting but five papers were read, and the discussion was carried on by some ten gentlemen. Since then the fortunes of the Section have varied. At one time, interest in it had so declined that a motion was offered that the Section be done away with. Fortunately, this motion was not passed.

The best meeting that the Section ever held was that in Milwaukee in 1893. The program arranged for this present meeting has been gotten up to as great an extent as possible on the lines of the Milwaukee one.

Although the report of the Committee on Revision of the Constitution was not adopted at the meeting in San Francisco last June, still it has been thought best to follow the provisions of the proposed revision, as much as possible, in making arrangements for this present meeting of our Section. Accordingly I shall appoint at the close of this first session a Nominating Committee, consisting so far as may be, of ex-chairmen of the Section who are present. This committee is expected to make its report at tomorrow's afternoon session. It will then report nominations for chairman and secretary.

The Executive Committee is composed of the three last chairmen of the Section.

Provision has been made to have all the papers and discussions of the Section, together with lists of its officers and members, and the rules adopted for the conduct of its work, republished from the JOURNAL, in convenient form for preservation.

The services of a competent stenographer have been secured to take full and accurate reports of all discussions.

Letters have been sent to many physicians eminent in pediatrics throughout the country, soliciting papers for this present meeting, and it is hoped that the program made up from the papers thus obtained, and the discussions upon them will be interesting and profitable.

The rule that papers must not consume in reading more than twenty minutes, and that no member shall occupy more than fifteen minutes in the discussion of any paper or papers will be enforced.

The following resolution, adopted in 1888 was printed in the preliminary program, which was sent to all the gentlemen expected to take part in the proceedings of this Section and to others, viz.: "That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers." This was done in the hope that more members of the ASSOCIATION would identify themselves with our Section.

The General Business Committee of the ASSOCIATION is composed of the Executive Committee of the several Sections. This committee was created to take from the general sessions of the ASSOCIATION, much of its routine work, so that members of the ASSOCIATION can devote more time to the proceedings of the various Sections.

Would it not be well also to have but one annual address delivered before the general session of the ASSOCIATION—that of the President on the first day, and have the three other annual addresses (those on General Medicine, General Surgery and State Medicine) delivered before the Sections in which they respectively belong?

In San Francisco last year, on the first day of the

meeting a motion was passed that the hour of meeting of the general session be changed from 10 A.M. to 12 M., in order that all members might be able to be present. If an annual address, not to exceed one hour's time were to be given each day at 12 M., and the regular routine business also carried out, this would not leave enough time to get lunch and then return for the afternoon Section work.

An amendment is to be voted on at this meeting, offered in 1892,—“That Thursday morning's general session be omitted, and the time be devoted to sectional work.” This has the same object in view as the above suggestion.

If the three annual addresses were to be given in their respective Sections, instead of in the general sessions, then the general sessions could be held at noon each day, except the first, when the President's address is given and when the Sections do not hold any session, and the Sections could thus have a two and one-half, or three hours' session both morning and afternoon of each day.

The good to be obtained from the AMERICAN MEDICAL ASSOCIATION must come from its Sections, and all efforts should be directed to make the work of each a success.

At the Milwaukee meeting in 1893, it was moved and carried that this Section have a dinner at its next annual meeting. Unfortunately so few attended its meetings in San Francisco that the dinner was never heard of. I would be glad at any session to entertain a motion to have a dinner at our next annual meeting.

ORIGINAL ARTICLES.

THE EARLY HISTORY OF VAGINAL HYSTERECTOMY.

Delivered before the Chicago Medical Society, March 18, 1895.

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Every great operation in surgery has a period of evolution of varying duration. Each marked advance in medicine and surgery is preceded by attempts which led to the elucidation of old ideas or the conception of new ones. All great discoveries are overshadowed by the labors of a host of earnest and progressive workers which ultimately crown the efforts of a favored few. Nearly all of the improvements in medicine and surgery which have characterized the present progressive age are only a repetition of the work of our professional ancestors. Many a so-called modern operation is only a recent and not always an improved edition of the operative technique as devised and described by one of the old masters. These remarks apply with special force to vaginal hysterectomy. The operation of removing the carcinomatous uterus through the vagina, so recently developed to its present state of perfection, was planned and performed by men who have long since departed, but whose names will always be intimately associated with the interesting history and gradual development of this operation.

There can be no doubt that the first ideas which led to the plan of removing a diseased uterus through the vagina were based upon the results which followed the unintentional removal of the uterus in cases of

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mistaken diagnosis. All of the early operations were done for prolapse or inversion of the uterus. The idea of removing the uterus through the vagina originated with Soranus, who was a distinguished obstetrician in Rome during the reign of Emperor Hadrian. The first authenticated description of removal of the uterus through the vagina was given by Berengarius, of Bologna, in 1507. Like all of the early cases, we are ignorant as to the exact pathologic conditions for which this operation was made, but there can be no doubt that part of the uterus was removed. J. Schenck a Grafenberg (1617) relates a number of cases in which the uterus was removed through the vagina, in whole or in part, by ignorant persons who had not the faintest ideas as to the nature of the difficulty or of the extent and gravity of the operation. In 1792 Laumonier removed an inverted uterus below a ligature. The patient died six weeks after operation. The post-mortem showed cicatricial obliteration of the vagina, absence of the uterus; the ovaries and tubes were found on the side of the rectum. Baudelocque examined the specimen later and found that the inversion was caused by an intra-uterine growth and explained that the operation was limited to the removal of the tumor, and that the uterus was removed later by the application of a ligature which opened the peritoneal cavity and caused the fatal suppurative peritonitis. Beyerlé, on the other hand, asserted that the entire uterus was removed at the first operation. Other cases of vaginal removal of the inverted uterus, with or without the presence of a uterine tumor, have been reported by Bardol, Marc-Antoine, Petit de Lyon and Widmann. Cases of unintentional, partial or complete vaginal hysterectomy are also related by Sclevogt, J. Ramsbotham, Figuet and Blasius. Instances of partial or complete removal of the uterus in which the organ was rudely removed by midwives have been reported by Hildanus (1646), Wrisberg (1785) and Bernhard (1824). In the case reported by Bernhard the inverted uterus was removed by the midwife with a razor, the profuse hemorrhage was controlled by the introduction of fragments of ice into the vagina, and the woman recovered.

Cases of intentional removal of the uterus by surgeons have been recorded by Zwinger, Viussen, Baxter, Faivre, Alexander Hunter, Joseph Clarke and Johnson. In Zwinger's case the amputation was made soon after delivery after preliminary ligation. Death two days after operation. The post-mortem showed that the middle portion of the uterus had been removed. In Baxter's case the uterus was amputated in the same manner five weeks after delivery. Recovery six weeks after operation. Faivre applied a ligature to the recently inverted uterus which sloughed and was detached on the twenty-seventh day after ligation, followed by recovery of the patient.

Johnson cut off the uterus below the ligature and his patient made a good recovery. In a second case of recent inversion of the uterus, the same surgeon applied a ligature to control the profuse hemorrhage. The hemorrhage ceased and the ligature was removed two days later. The hemorrhage returned, when the uterus was again ligated, and fourteen days later the fundus and tubes were detached in the form of a slough, after which the patient made a satisfactory recovery.

Windsor (1819) operated on a case of chronic inversion by tying a silk ligature around the uterus.

He tightened the ligature more firmly every evening and on the twelfth day after the ligature had cut its way nearly through the tissues, he cut off the uterus below the ligature without incurring any hemorrhage. The specimen removed was three inches in length and consisted of the uterus, round ligaments and a portion of the tubes and ovaries. After a protracted illness the patient ultimately made a favorable recovery. In Weber's case the inversion was caused by an intra-uterine tumor, hastened by a midwife, who made an attempt to remove the tumor by traction. Weber ligated the fundus of the uterus, tightened the ligature daily, and cut off a piece below it four and one-quarter inches in diameter, and an inch and a half in length. The specimen removed contained portions of the tubes. Eight days after the application of the ligature the ligated mass sloughed off. The woman recovered without any untoward symptoms and remained in good health a year after the operation.

Rheineck operated on a similar case. The patient was a multipara, 41 years of age. The entire uterus was removed by the use of a ligature. A careful examination after recovery of the patient showed no trace of the uterus. In many of the cases operated upon before 1800, the diagnosis was uncertain, but in most instances the operation was performed for simple or complicated inversion of the uterus.

Vaginal hysterectomy for malignant disease of the uterus dates back to the year 1812, when Paletta appears to have removed the entire organ. The extent of the disease is unknown, but the tumor occupied the lower segment of the uterus. Paletta did not know that he extirpated the entire uterus until he examined the specimen after the completion of the operation. The patient suffered for nine months from pain in the back and hips and a copious sero-sanguinolent vaginal discharge. The cervical portion of the uterus was the seat of an ulcerating tumor. The operation was performed April 13, 1812. By the use of obstetric forceps and the hand, the uterus was brought down to the vaginal outlet. The upper part of the vagina was incised with a pair of curved scissors. After separating the lower segment of the uterus a hard body could be felt at the base of the tumor. This hard body proved to be the fundus of the uterus which remained in connection with the tumor. The patient died at the end of the third day. Paletta did not intend to remove the entire uterus with the tumor, and the extent of the operation became evident only after the completion of the operation upon careful examination of the specimen removed. The more general use of improved vaginal specula about the beginning of the nineteenth century enabled the surgeons to make an earlier and more accurate diagnosis in affections involving the vaginal portion of the uterus and rendered the organ more accessible to direct surgical intervention. To Oslander, of Göttingen, more than to any one else, belongs the credit of popularizing the use of the vaginal speculum as a diagnostic resource and as an aid in operations upon the lower segment of the uterus. As early as 1808 he resorted to the speculum and curved scissors in the removal of uterine polypoid growths. To the same surgeon also belongs the honor of having devised and practiced for the first time, supravaginal amputation of the carcinomatous cervix uteri. The first operation of this kind he performed in 1801. The carcinomatous cervix as large as a child's head,

which filled the vagina, was drawn through the vaginal outlet with a pair of Smellie's obstetric forceps. The greater part of the tumor was torn away from the cervix, an accident which was followed by profuse hemorrhage. As the uterus could no longer be drawn down by the use of forceps, he inserted, with curved needles, four traction sutures at the vaginal insertion, placed at an equal distance apart. The needles and sutures were brought out through the cervical canal at a level corresponding with the internal os. By gradual and careful traction upon the sutures, the lower segment of the uterus was brought down to near the vaginal outlet. With Pott's fistula knife the carcinomatous cervix was then amputated. The hemorrhage, which was quite profuse, was controlled by applying a sponge dusted over with a styptic powder. The patient was convalescent four weeks after the operation. The experience with this case led him to devise another method to enable him to render the uterus more accessible in cases in which the cervix was so much diseased that it could not be drawn down by the use of forceps or traction sutures. This modification of his first procedure consisted in grasping the cervix with the fingers of one hand and pressure of the hand of an assistant upon the abdominal wall above the uterus, and removal of the cervix with curved scissors. For the purpose of removing carcinomatous tissue from the cavity of the uterus he invented a curved chisel. The application of Smellie's obstetric forceps, as an aid in performing vaginal hysterectomy, led to the invention of traction forceps by Museux and Récamier. The reports of Oslander's attempts to remove the carcinomatous uterus through the vagina soon reached France, and his operative procedures were modified by Dupuytren, Lisfranc and other French surgeons.

Dupuytren dragged the uterus toward the introitus vagina with tenaculum forceps and amputated the cervix with curved scissors. Lisfranc exposed the cervix with the aid of a bivalve speculum, grasped it with his tenaculum forceps, removed the speculum and by gradual traction brought the diseased part within easy reach. In the case of fungous growth he used the fingers of the left hand in making pressure against the blades of the forceps to prevent tearing. The amputation was made with a curved bistoury guided by the fingers of the left hand.

Hatin used a bivalve speculum and a traction forceps of his own invention, the teeth of which grasped the interior of the uterus as well as the external surface of the vaginal portion. Forceps of a complicated structure for vaginal hysterectomy were also devised by Canella and Colombat. The results of partial vaginal hysterectomy for carcinoma, as practiced by Oslander and his immediate followers, were as could be expected most discouraging. Oslander's cases, twenty-three in number, died sooner or later after the operation. The work of the French and Italian surgeons yielded no better results. In all of the cases the diagnosis was made and the operations done long after the disease had passed beyond the limits of the parts removed. A speedy local recurrence and death within a year after the operation were constant occurrences in all of the cases. The local and regional dissemination of carcinoma of the uterus were not well known at that time and the operative procedure was usually limited to the part of the tumor and uterus which projected into the vagina.

Dupuytren reported twenty-nine cases of vaginal removal of the carcinomatous cervix with fifteen deaths, but a later report by Pauly left only one recovery. The unsatisfactory results of the operation induced Dupuytren later to abandon it almost entirely and to substitute for it the potential cautery. The authenticated history of intentional complete extirpation of the uterus for carcinoma dates back to 1818. In 1810, Wrisberg discussed the propriety and feasibility of vaginal hysterectomy in a prize essay read before the Vienna Royal Academy of Medicine. Two years later, Paletta removed the uterus through the vagina for carcinoma. He did not intend to remove the entire uterus, and the fact that the entire organ had been removed only became apparent after the completion of the operation by a careful examination of the specimen removed.

The first deliberate and well-planned vaginal hysterectomy for carcinoma was made in 1813 by J. C. M. Langenbeck, of Göttingen, the uncle of the late distinguished surgeon B. von Langenbeck. The paper of Wrisberg and Paletta's case encouraged him to undertake this difficult task. His patient was a Mrs. Oberschein, 50 years of age, the mother of several children, with the general health but little impaired. She had suffered for some time with a lancinating pain and a burning sensation in the region of the uterus. The uterus had gradually descended toward the vaginal outlet. The suffering became so severe that the patient begged for an operation. Uterus prolapsed. On examination the cervix was found of a stony hardness, nodular and ulcerated. The cervical canal very vascular, ulcerated and from it escaped a bloody and exceedingly fetid discharge. The irritating vaginal discharge had caused erosions of the external genital organs. The ulceration of the cervical canal extended deeply into the cavity of the uterus. Digital exploration of the cervical canal and uterine cavity revealed an ulcerated surface with great induration of the cervix and body of the uterus, and was followed by free hemorrhage. Through the inverted vagina the uterus could be felt as a firm body which could also be distinctly felt by rectal examination. As Langenbeck had no precedent to follow, he had to devise his own plan for the removal of the entire uterus upon which he had decided. The operation was performed in the following manner: the patient was placed with the pelvis upon the edge of the bed with the thighs separated and the feet resting upon two stools. The operator properly seated between the thighs dissected the vagina from the cervix, the dissection was continued until the peritoneal envelope of the uterus was reached. The dissection was made with special care not to open the peritoneal cavity by directing the edge of the knife against the uterus; and separating the tissues as far as this could be done with the handle of the scalpel. To reach the fundus of the uterus, the broad and round ligaments and the Fallopian tubes had to be divided. In his first report of this case he maintained that he removed both ovaries with the uterus, but from later information gained by examination of the specimen and repeated examinations of the patient, he corrected this statement. Two round hard excrescences connected with the uterus gave rise to this wrong impression. The last part of the operation consisted in the subperitoneal enucleation of the fundus of the uterus. He had no one to assist him except a gouty surgeon who, when called upon to render much

needed aid, could not rise from his chair. Toward the end of the operation the hemorrhage became alarming, when the following conversation, occurred: Langenbeck: "*Herr, so humpeln Sie doch jetzt herbei.*" Assistant: "*Ich kann nicht.*" With severe hemorrhage and approaching collapse of the patient and no one to assist him, prompt action on the part of the operator became a matter of urgent necessity. With the left hand, Langenbeck grasped and compressed the bleeding part, and with the right hand he passed a needle armed with a ligature through the tissues behind the bleeding point. Having only one hand at his disposal the ligature was tied by grasping one end between the teeth and the other with the right hand. At this stage the patient appeared to be dying. Dashing cold water over the face revived her. The long wide vagina was now pushed in an upward direction by introducing the whole hand. Above the vagina was a deep pocket, the walls of which were composed of the peritoneal investment of the uterus. Vagina and peritoneal pouch were continuous with each other and no opening into the peritoneal cavity could be detected. Through the peritoneum the intestinal coils could be distinctly felt. To prevent the inversion of this peritoneal bag by pressure against it of the intestines, a sponge was inserted. In spite of the critical condition of the patient at the close of the operation she made an uneventful recovery. If we remember that this, the first complete vaginal extirpation of the carcinomatous uterus was made without an anesthetic, without assistance, and without the use of hemostatic forceps, we can easily conceive the difficulties which the operator encountered and grant him willingly the well merited and hard won honor of having established an important surgical operation. Langenbeck's trials, however, only began at the completion of the operation. Death of the patient would have brought him undeserved censure; her recovery excited the envy of his colleagues which followed him to his grave.

The history of medicine and surgery is replete with similar incidents. The originator of every marked improvement in medicine and surgery has, during his lifetime, received but little recognition for his labors on part of his colleagues. Professional jealousy has always selected for its target the men conspicuous by their honest, unselfish work. Langenbeck's report of his successful operation aroused doubt and a bitter criticism among his contemporaries. Upon his return from Cassel, where the operation was performed, he visited his friend Oslander, and related to him the particulars of the operation. Oslander doubted the possibility of complete removal of the uterus and adnexa without opening the peritoneal cavity, as was first claimed by Langenbeck, and said that he would advise all of his patients who desired to have the uterus enucleated to consult Langenbeck.

Jörg doubted the veracity of the description of the operation. Langenbeck invited his friends to examine the patient after her recovery. The invitation was accepted by Mende and von Siebold. Mende made the examination twelve years after the operation. The patient was in perfect health at that time, and the most careful examination satisfied Mende that the entire uterus had been removed. Von Siebold made the examination Oct. 4, 1829. He indorsed the statements made by Mende in every respect. The testimony furnished by his trusted friends did not succeed in allaying the suspicions of a doubt-

ful profession. Unfortunately the specimen was lost at the time of operation and could not, therefore, be utilized to verify and support Langenbeck's claims. His assistant died soon after the operation, and his testimony was, therefore, not available to substantiate the operator's position. Nothing was left for Langenbeck to do but to await patiently the opportunity to fortify himself by the results of a post-mortem examination upon his patient. The patient died of senile marasmus June 17, 1839, twenty-six years after the operation. The post-mortem was made by Dr. Neuber in the presence of three other prominent physicians. The bladder, rectum and vagina were removed together and placed in alcohol. No adhesions were found in the abdominal cavity and no signs of recurrence in any part of the body. The specimen is described in Max Langenbeck's dissertation, "*De totius uteri extirpatione*," Göttingen, 1842. The upper part of the vagina and the empty peritoneal pouch formed by the enucleation of the uterus were found inverted and formed a swelling in the vagina which reached as far as the labia majora. Inspection of the peritoneal surface showed the Fallopian tubes, their cut ends terminating in the peritoneal pouch. The inverted pouch appeared between rectum and bladder as a globular depression, the surface of which did not show signs of scar tissue anywhere. Langenbeck places great stress on the peritoneal hernial protrusion, as a positive demonstration that the uterus was enucleated without opening the peritoneal cavity. Both ovaries were found in their normal relations with the fimbriated extremities of the tubes. The description of the operation as given by Langenbeck is corroborated by the results of the post-mortem, and the case will always remain in history as the first intentional complete vaginal extirpation of the uterus.

The second complete extirpation of the uterus per vaginam was performed by Sauter Jan. 28, 1822. Billroth and others have repeatedly wrongly quoted Sauter's name as the originator of the operation of vaginal hysterectomy when, as the records show, his operation was performed nine years later. Sauter's case differs from Langenbeck's, in that the uterus was not prolapsed and the peritoneal cavity was freely opened during the operation. The patient was 50 years of age, and the cervix was found extensively ulcerated. Sauter intended to make an artificial prolapse, as suggested by Wenzel, by the employment of tenaculum forceps, and then remove the uterus by enucleation after the example of Langenbeck. In the attempt to bring the uterus down with the curved index finger, the papillomatous excrescences broke off, which gave rise to considerable hemorrhage. The vagina was now cut off from the cervix by a circular incision and another attempt made to bring the uterus down by traction forceps, one blade of which was inserted into the cervical canal and the other placed upon one side of the cervix. Making in this manner strong traction upon the uterus, the attempt was made to separate the bladder from the uterus by the finger and handle of scalpel, but this did not succeed. The piece of the cervix grasped with the forceps was torn off and after working for half an hour he concluded to remove the uterus in its position by the use of a curved scalpel. Two fingers of the left hand served as a guide to the knife, and with it the uterus was detached from the bladder. The whole hand was then

inserted into the peritoneal cavity, and with it the fundus of the uterus was seized. In the attempt to draw the uterus down, the intestines escaped and, after replacing them, a repetition of the same manipulation caused the same accident. He finally succeeded in dragging the fundus of the uterus through the opening after which it was separated from the remaining attachments. The intestines did not prolapse after the removal of the uterus; urine escaped involuntarily. The opening contracted into a funnel-shaped space with the apex directed upward. A few days later urine escaped through the vagina, showing that the bladder had been injured during the operation. After closure of the peritoneal cavity the opening in the bladder was discovered. The patient recovered from the immediate effects of the operation, but died on June 31 of the same year.

The post-mortem showed that the peritoneal cavity was closed. A large opening in the posterior wall of the bladder communicated with the vagina. A number of limited intestinal adhesions, ovaries in their normal location, tubes indistinct.

The experience with this case led Sauter to make the following suggestions: horizontal position of the patient; complete evacuation of rectum and bladder. Pressure by the hand of an assistant over the abdomen above the pubes in the direction of the pelvis. Incision of vaginal vault between uterus and bladder with scalpel with a short convex blade. Enlargement of this opening around the whole cervix with the same knife. Section of the broad ligaments close to the uterus with curved scissors, guided by the fingers. Separation of uterus from the rectum with curved scissors; at last, bringing down of the uterus with the whole hand and separation of remaining attachments.

#3 The third complete vaginal extirpation of the uterus was made by Elias von Siebold, April 19, 1823. The patient was 38 years old. To prevent injury to the bladder, a catheter was inserted and held in place by an assistant. The same assistant compressed the abdomen above the pubes in the direction of the pelvis. The vaginal vault close to the cervix was incised with Savigny's fistula knife, first on the right side of the cervix, guided by the two fingers of the left hand. The opening was then enlarged sufficiently for the introduction of a finger; after this, section of the vaginal insertion all around and close to the cervix; the broad ligaments were divided between two fingers close to the uterus with a small pair of polypus scissors. The uterus was now detached on the right side. To effect this also on the left side, two fingers of the right hand were inserted, and using them as a guide the opposite side was separated with Savigny's knife and Oslander's chisel. A finger was now inserted into the cervix, and with another pressure made from without, whereupon the remaining attachments of the vaginal vault on the right side were torn and the uterus slipped from between the fingers. The intestines could be felt, but did not prolapse. The uterus was now so high that it could only be felt with the tips of the fingers. Attempts to bring it down by the insertion of the assistant's fingers into the rectum and the use of Boer's excerebration forceps proved a failure. The operator satisfied himself that the only way in which the uterus could be brought down would be by the insertion of the whole hand into the peritoneal cavity. As the vaginal entrance was too narrow, the peri-

neum was incised. The opening in the vaginal vault had also to be enlarged, which was done with Savigny's knife. The hand was now inserted, the fundus of the uterus grasped, and the organ drawn down into the vagina, after which the left broad ligament was divided in the same manner as on the opposite side. Death sixty-five hours after the operation. The post-mortem showed inflammation of the small intestines; fibrous exudations upon the peritoneal surfaces; rectum and bladder intact.

The second case, operated upon after Sauter's method, was by Holscher Feb. 5, 1824, a patient upon whom Prael had performed previously Oslander's operation. The patient was placed in the dorsal horizontal position upon an obstetric chair. As the uterus could not be brought down with the hand and a brass needle twelve inches in length, the carcinomatous cervix was excised in order to reach the fundus of the uterus more readily. The vaginal vault and the broad ligaments were divided with an amputating knife, guided by two fingers, close to the uterus; first on one side, then on the other. Death in less than twenty-four hours.

Wolff operated according to Sauter's method May 5, 1824. The patient was 60 years of age and insane. In this case the operation was greatly facilitated by complete prolapse of the carcinomatous uterus and inversion of the vagina. The incision of the vaginal vault was first made in front, then on both sides. The ligaments and tubes were then brought forward and divided some distance from the uterus, after which the uterus was separated from the rectum. The wound was sutured and the inverted vagina replaced. Death two days after operation.

In 1830 Delpech combined vaginal with abdominal hysterectomy, being five years later than Langenbeck's first laparo-hysterectomy. At the vaginal vault Delpech incised the tissues between the bladder and cervix with a knife of his own invention. The separation of the loose connective tissue and the tearing of the peritoneum was done with the finger. After enlarging the opening sufficiently to insert two fingers the abdomen was opened above the pubes by making first an oval skin flap, after which the linea alba and peritoneum were incised. The operator then inserted a finger through the wound between uterus and bladder, which was used as a guide in dividing the broad ligaments, after which the uterus could be sufficiently mobilized from above to sever the remaining attachments safely.

The fifth total extirpation of the uterus after Sauter was made by Elias von Siebold upon a patient 30 years of age July 25, 1825. He rendered the uterus more accessible prior to dividing the broad ligaments by passing a silver needle with a steel point armed with a strong thread through the cervix, using the thread as a guy rope. The patient died two days after the operation.

#5
#6 The sixth total vaginal hysterectomy for carcinoma was made by Langenbeck upon a servant, 28 years of age, August 5, 1825. As a preliminary step, the perineum was incised for the purpose of widening the vaginal opening sufficiently to permit the introduction of the whole hand to grasp the uterus before the division of the right broad ligament. After placing the index finger of the left hand in the vaginal vault between the cervix and the rectum, it was utilized as a guide to Oslander's hysterotome, with which an incision was made into the pouch of Douglas. This

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opening was dilated until the whole hand could be introduced with which the fundus was grasped, and pressed in a downward direction, placing the broad ligaments on the stretch. After section of the right broad ligament, the uterus could be brought down beyond the rims pudendi, which made it easy to divide the remaining attachments. He places great stress on opening the peritoneal cavity behind and not in front of the uterus, as by doing so the bladder is exposed to less risk of being injured. He also insists that the large pelvic vessels should be protected by making the incisions close to the uterus. As an additional safeguard to protect the bladder and the urethra, a catheter is held in proper position in the bladder by an assistant. The hemorrhage was not severe. After the completion of the operation a sponge was inserted into the vagina, and for the abdominal pain twenty leeches were applied without any material benefit following. The patient died on the second day. The post-mortem revealed that the small intestines in the pelvis were covered by coagulated blood and a plastic exudate.

The seventh total vaginal extirpation of the uterus after Sauter was made by Récamier, July 26, 1829, which, according to Gendrin, was the first operation of this kind in France. He modified Sauter's procedure only in so far that he ligated the uterine arteries in the lower part of the broad ligaments before dividing them higher up. His patient was 50 years of age. With two tenaculum forceps he gradually brought the carcinomatous cervix as far as the vulva. The vagina in front of the cervix was incised with a probe-pointed bistoury (convex), and with the index finger the loose connective tissue between bladder and cervix separated as far as the peritoneum. The opening was enlarged with the bistoury sufficiently to enable him to insert two fingers; the peritoneal cavity being opened, the fundus of the uterus was grasped and the upper part of the broad ligaments was then divided one-third from above downward, without causing much hemorrhage, after which between thumb and index finger the lower part of the broad ligament, first on the right, and afterward on the left side, was seized and with a curved tunneled needle armed with a ligature, the ligament was transfixed and tied, thus securing the uterine arteries. The broad ligaments were then divided above the ligature. The uterus could now be brought out of the vagina and its attachments with the rectum were easily separated. The operation was completed in twenty minutes. Complete healing of the wound twenty-seven days after operation.

The eighth vaginal extirpation of the entire uterus was made by Langenbeck, August 18, 1829. This was his fourth complete extirpation of the uterus, and his third *per vaginam*. It differed from his preceding cases in that the Douglas pouch was opened first and the uterus removed piecemeal to the fundus, which did not appear to be diseased. Hemorrhage slight. The patient recovered from the immediate effects of the operation, but died on the eleventh day. Intestines reddened in places. Only a small fragment of the fundus remained. A rectal fistula with irregular margins was found as the immediate cause of the fatal peritonitis.

The ninth complete vaginal removal of the uterus was performed by Roux, Sept. 20, 1830. The patient was 50 years old and the method employed Récamier's. Death soon after the operation. The same surgeon

performed his second operation five days later, following the same plan with a similar result.

The eleventh vaginal extirpation of the uterus was performed by Récamier Jan. 18, 1830, upon a woman 35 years of age. At the completion of the operation the intestines escaped into the pelvis; they were reduced and the wound sutured. The patient died on the second day from what was believed to be secondary hemorrhage from the internal spermatic artery.

Blundell made the twelfth vaginal hysterectomy Oct. 16, 1830. The woman was 47 years old. Cervix much enlarged and ulcerated. Patient's general health greatly impaired. The uterus was exposed with the rectal speculum of Weiss, which was removed after grasping the cervix with tenaculum forceps. After bringing the uterus well down into the vagina a second forceps was applied, and by an assistant making traction upon both of them the uterus was brought within easy reach. An incision was made between the cervix and rectum with an ordinary scalpel, after which the opening was enlarged with a probe-pointed bistoury. The next step in the operation consisted in making a transverse incision in front of the cervix, separation of uterus from bladder, during which the latter was opened. The fundus of the uterus was grasped with the hand, and into it was inserted a sharp hook, with which it was drawn in the direction of the vagina, after which both broad ligaments were severed. Hot fomentations and thirty leeches relieved the abdominal pain. A return of the pain was met by the application of twenty leeches. Four weeks after the operation the patient was convalescent, but the vesico-vaginal fistula remained.

Dubled suggested that after liberating the cervix by vaginal incision, and after bringing the uterus well down into the vagina by the employment of tenaculum forceps, the broad ligaments should be ligated without previous partial division, as was done by Récamier. After this has been done the uterus is so freely movable that the diseased part can be readily excised. He insisted that the operation should be limited to the removal of diseased tissue. He carried this method into effect once, but his patient died twenty-four hours after the operation. In 1839 Langenbeck performed a supravaginal amputation of the uterus for carcinoma. The patient was 44 years old. The cervix was grasped with two vaginal forceps, and by continued traction it was brought down to the vulva. A circular incision around the cervix was made and the dissection carried upward extraperitoneally as far as the body of the uterus, where the amputation was made. The patient made a good recovery, and at the time she left the hospital the wound was completely cicatrized.

I have given you this brief outline of the early history of vaginal hysterectomy, to show the value of a retrospective view in these times of unrest in medicine and surgery. In the laudable ambition to devise new operative procedures, the surgeons of the present day often ignore the work of our forefathers. New operations are devised and described which were conceived and practiced, or, at least, recommended years ago. Honesty and justice demand that credit should be given to whom it belongs. From what I have said it is evident that the uterus has been removed through the vagina for inversion and prolapse for more than a century. The credit for removing the carcinomatous cervix by the same route unquestionably belongs

to Osiander. This operation was later improved by M. Langenbeck, who made, for the first time, the supravaginal amputation of the cervix for carcinoma in 1830, an operation which was later revived and popularized by Schroeder. Langenbeck and Sauter were the pioneers in establishing vaginal hysterectomy for carcinoma. Langenbeck enucleated the uterus in 1813 and his patient recovered and finally died of senile marasmus at the age of 84. Sauter removed the entire uterus *per vaginam* successfully in 1822 by an operation which, with some slight modifications, is practiced to-day. Of the first twelve cases of complete vaginal hysterectomy, only three recovered, a mortality of 75 per cent. Extraperitoneal enucleation of the uterus has recently been described as a new operation, but those conversant with the history of surgery will always link Langenbeck's name with the origin of this operation. The great mortality which attended the first attempts to remove the uterus through the vagina were due to hemorrhage and infection. The improved means and technique in prophylactic hemostasis and the introduction of aseptic surgery encouraged Czerny to revive and improve vaginal hysterectomy in 1878. Since that time the operation has been modified in various ways, and has now become an established procedure in the treatment of well selected cases of carcinoma of the uterus, but the honest student will always connect the early history of this operation with the names of Osiander, M. Langenbeck and Sauter.

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BRIGHT LIGHT IN THE SCHOOL ROOM A CAUSE OF MYOPIA, AND A METHOD PROPOSED FOR THE ESTIMATION OF THE QUANTITY OF LIGHT.

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The object of this paper is to ask attention, briefly, to the physiologic results of regular use of the eyes in bright light, and more especially to raise the question as to whether progressive myopia in school children is not attributable to a large extent to such use. Also to propose a method of estimating the quantity of light in a given place or room with some approach, at least, to mathematical exactness.

The prevalence of myopia among school children attracted the notice of observers more than thirty years ago. Cohn examined the eyes of 10,000 school children and reported over 2 per cent. myopic in the elementary departments, over 10 per cent. myopic in the intermediate departments, more than 19 per cent. myopic in the high schools, and more than 26 per cent. myopic in the gymnasium. The showing discloses an almost regular ratio of increase from the lower to the higher grades. More recent statistics show an increase since that time of from 25 to 50 per cent. in the number of myopic pupils in the higher German schools. In other words, the longer school life continues, the larger is the percentage of myopia. While Germany leads the world in the intensity and persistency of school work, as she does also in the percentage of myopics, the same conditions, though in a less degree, are shown by the statistics of every civilized people.

Some country schools show as low as 5 per cent. average including 1 per cent. myopic in the elementary departments, but in all, the percentage increases rapidly with the continuance of school life. The causes assigned are: 1, bad air; 2, inheritance; 3, general debility; 4, unnatural posture; 5, use of eyes during partial congestion of the blood vessels of brain; and 6, the use of eyes upon fine print or upon