tent with what suffices is in our eyes folly. Hence it is easy for us to become gamblers, promoters, givers or takers of bribes, drunkards, and suicides; and in the midst of the dazzling spectacle of our national progress, it is a question whether our millionaires or our toiling, hard-driven wage-earners, are more discontented and unhappy.

With us everything improves—mechanical devices, the breeds of domestic animals, the qualities of vegetables and fruits—man alone is stationary or retrograde, because his nature, being essentially moral and religious, the worship of vulgar success, the indulgence of appetite, the preference of the external and transitory to the real abiding world within, make religion and morality impossible.

From the midst of such a world, a man like Dr. Davis rises, like one inspired, to proclaim by word and deed, that righteousness is life, that the wages of sin is death, that whatsoever thing a man soweth that shall he reap, that sin or culpable ignorance or neglect, which is sin, is the cause of nearly all the diseases, ills and miseries by which we are brought to ruin.

To the learned professions especially his teaching and his example declare that they rest not more on a basis of knowledge and skill, than on a foundation of principle, honor and benevolence. His view is generous and comprehensive. Not for his clients alone does the lawyer exist, nor for his penitents, the priest; nor for his patients, the physician.

God makes sages and saints that they may be fountain-heads of wisdom and virtue for all who yearn and aspire; and whoever has superior knowledge or ability is thereby committed to more effectual and unselfish service of his fellow-men. If the love of fame be but an infirmity of noble minds, the craving for professional reputation is but conceit and vanity. To be of help, and to be of help not to mere animals, but to immortal, pure, loving spirits—this is the noblest earthly fate, this, the highest good fortune. In the light of this ideal Dr. Davis believed, hoped, loved, worked, suffered, died and triumphed. When the politicians, the captains of industry, the inventors of mechanical devices, the lavishers of millions to promote whatever ends, shall have sunk into oblivion or be remembered with the contempt of indifference, he shall remain as a witness to right human life, as an influence and encouragement to all who have faith in God, in truth, in justice, in plain, unselfish living, in brave endeavor, in purity and love; a principle of hope and courage, an inextinguishable light to beings who wander amid the labyrinths of time and space, and feel and are certain that their true home is with the Eternal Father who makes and upbears the Universe that beings like unto Himself may be born and grow forever.

Before the Royal College of Surgeons of London, there is delivered an address, each year, to commemorate the life and work of John Hunter. Let the physicians and the medical schools of Chicago bear witness to their love of worth and appreciation of excellence, by making a similar foundation to perpetuate the memory of Nathan Smith Davis.

The Physician Should Insure His Life.—A physician owes much to his family. His peculiar life, his enforced absence, and his irregularity are exasperating in the extreme; therefore, he should offer reasonable compensation by definitely providing for accidents, illness, and death, particularly for the comforts of those who depend on him for their future existence.—*N. W. Lancet.*

Original Articles.

THE SURGICAL TREATMENT OF BILOCULAR UTERUS AND BIFID VAGINA.*

H. W. LONGYEAR, M.D.

Gynecologist to Harper Hospital; Physician to the Woman's Hospital; Clinical Professor of Gynecology, Detroit College of Medicine; President of the American Association of Obstetricians and Gynecologists.

DETROIT.

My object in presenting this subject is to call attention to a simple operative procedure for the correction of one of the numerous forms of anomalous development of the female generative organs which result from faulty evolution in the process of development of the Müllerian ducts.

The strange silence of gynecologic literature appertaining to the therapeutics of these sexual deformities is remarkable, as it would seem that, where possible, their early discovery and correction should be aimed at, rather than allowing such abnormal conditions to continue as a serious menace to the health, and possibly the lives, of their possessors.

The bilocular, double, or septate uterus is usually attended with the same condition of the vagina, the latter being divided by an apparent continuation of the uterine septum into two lateral halves. The cause of the deformity being an arrest of coalescence of the Müllerian ducts, the result is one uterus and one vagina divided by an anteroposterior septum of fibrous tissue in such a manner as to cause the apparent duplication of the organs; thus, to correct the deformity and form one uterus and one vagina, as Nature intended, all that is necessary is to destroy the dividing septum in both vagina and uterus. When this is done, a vagina and uterus, both being rather more capacious than normal, will result, and the two small cervices will be coalesced into one normal-sized cervix. The whole apparatus is thus placed in practically a normal condition, so that gestation and parturition may be assumed in a normal manner.

Others, no doubt, have worked this matter out as is here suggested and corrected the deformity by operative procedure of one kind or another, but beyond the destruction of the vaginal septum, I can find nothing recommended in the text-books, and so I present my method of operating, with report of two cases, which comprises my experience with this particular variety of malformation.

Care is necessary in the selection of the cases for operation, so that a bicornate uterus may not be mistaken for a septate uterus, as it is apparent that the division of the mistaken septum in the former would open the peritoneal cavity. The differentiation is easily made by conjoined examination, so that, with reasonable care, the accident is not liable to happen.

THE METHOD OF OPERATION.

The vaginal septum is first removed in the following manner: Two pairs of long pedicle forceps are made to grasp it along its entire length from the vulva to the two cervices, one anteriorly and one posteriorly, close to the vaginal wall; the tissue between them is then entirely cut away with scissors and trimmed clear from between the cervices at its upper end; the Paquelin cau-

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. J. H. Carstens, A. Palmer Dudley and L. H. Dunning.

tery is then applied to the edges of tissue held in the grasp of the forceps, and the latter removed. This plan of removal of the septum insures a bloodless operation and can be accomplished much more quickly than if the parts are cut away and stitched.

The capacious vagina can now be opened widely with a retractor and the two small cervixes plainly seen lying closely against each other, with only the edge of the divided septum between them. Both are then dilated sufficiently to facilitate manipulation, the direction of each uterine canal ascertained, and, if necessary, a farther bimanual examination made to be certain as to the shape of the uterus. The dilator is then inserted, with one jaw in each os, and the Paquelin cautery knife thrust between them, cutting the septum to the depth of perhaps an inch. The dilator, which has acted as a shield to the outer sides of the cervix, is then withdrawn and the farther division of the uterine septum up to the fundus is completed with a pair of long, curved, blunt-pointed scissors. The cavity is then curetted, if necessary, and swabbed out with tincture of iodine and packed with iodoform gauze, the latter being continued into the vagina, which is also loosely packed with it.

At the end of four days the gauze is removed and daily vaginal irrigations of carbolyzed water, followed by sulphate of zinc solution, gr. 3 to 5 1, used till the parts in the vagina are healed.

The two cases which have come under my observation were discovered on examination to determine the cause of severe dysmenorrhea, both patients complaining of the persistently increasing pain from month to month.

In the first case only the vaginal part of the operation here proposed was made, and it was the experience with the case following the division of the vaginal septum that determined the trial of the extension of the operation to the removal of the septum in the uterus. The following are the histories of these cases:

CASE 1.—G. R., single, 20 years of age, but in appearance an undeveloped girl of 15. Breasts and labia small and genital hair scanty. Menstruation had occurred irregularly five or six times, each period being more painful than the last, and it was for this symptom that the girl's mother brought her to the clinic at the Woman's Hospital, Jan. 10, 1899.

Examination.—On examination under anesthesia the abnormality was discovered. The vulva was normal, the vagina was divided into two lateral parts by a firm anteroposterior septum which extended from the introitus to the vault, where, on each side of this dividing membrane, a small cervix uteri was felt, with the inner aspect of each lying closely to the septum and adherent to it almost to the os. On passing the sound along the finger into the two uterine canals, the left was found to deviate considerably toward that side, while the right was deflected but little from the median line. The left measured 2½ inches and the right 2¼ inches.

Each cervix was thoroughly dilated, and the patient directed to report occasionally for further observation and treatment. She was not seen again until June 13, 1902, when she presented herself again, through the courtesy of Dr. Samson of Windsor, Ont.

Her general development was then greatly improved in every way, and it was discovered that the members of the left side of her body were more largely developed than the right; the left breast, left arm, leg and thigh, as well as this side of the abdomen, being markedly larger than the opposite corresponding parts. The size of the hands and feet were not different. For several months she had had increasing severe pains at each menstrual epoch, which always began in the right hip and extended across the abdomen. On account of the limited room in the vaginal canal, due to the septum, bimanual examination was unsatisfactory, but a sensitive mass larger than an ovary

could be made out in the region of the right ovary, so its removal by abdominal section was decided on, as well as the ablation of the vaginal septum.

Operation.—At the Woman's Hospital, June 14, 1902. The vaginal septum was first removed in the following manner: Its whole length was grasped by two long pairs of pedicle forceps, one anteriorly and one posteriorly, from the introitus to the vault, cut away with scissors close to each forceps, and the edges thoroughly cauterized with the Paquelin cautery. On removal of the forceps no hemorrhage occurred. This left the cervixes projecting into a vagina which was rather wider than normal. The abdomen was then opened and a careful examination of the pelvic contents made. The double uterine body was nearly three inches in breadth at the fundus, the right side being somewhat smaller than the left, with a slight indentation marking the junction of the two halves. The left tube and ovary were normal; the right tube was normal, but the ovary was enlarged by a hematoma to the size of a hen's egg, and was removed.

Her first menstruation, while still in the hospital, was attended by the same pain in the back of the right hip. This same pain, occurring at the menstrual epochs, continued to increase in severity and duration after this operation, until Dr. Samson again returned the patient, Jan. 8, 1903, with the opinion that the woman would soon be dead, from either suffering or morphin, unless relieved.

Examination revealed no cause for the pain, but the condition being desperate, the removal of the remaining ovary was determined on for the purpose of bringing on the menopause. At the operation, which was performed at the Woman's Hospital, Jan. 29, 1903, nothing in the line of adhesions or other cause for the pain could be found, and the ovary was normal. It was noted that the right half of the uterus, the side from which the ovary had subsequently been removed, had diminished considerably in size.

A bloody discharge from the uterus, two days after the operation, caused the old pain in the hip, necessitating hypodermics for its relief, and ceasing with the cessation of the discharge. Four months after operation the patient reported no menstruation and no pain. Was becoming very fat.

After the experience with this case the query naturally rose as to the possible rôle the uterine septum had played in the causation of the dysmenorrhea, and whether its removal should not have been first attempted and the ovary left for the *dernier ressort*. It was decided to try it next time, not only for the relief of a possible dysmenorrhea, but for the purpose, as well, of placing the organs in a condition more nearly approaching the normal. Such an opportunity presented itself sooner than expected.

CASE 2.—W. M., servant, 21 years old, single, normally developed in every way. Menstruation began at 13 years of age, always painful, but lately much more so. Sought advice because of the severity of the pain, which was located in the hypogastric region, of a colicky nature, and active only during the first day of menstruation. Is well and strong between periods and able to work.

Examination.—Vulva normal; no hymen; two vaginal openings were found, divided by a thick, loose septum which adhered closely to the right side, and was not at first discovered by inspection. This septum extended from the entrance to the vault of the vagina, where a cervix uteri could be felt on each side of it. Vagina very capacious, each side receiving a large size bivalve speculum. Cervixes small and placed close to the septum. Sound passed 2½ inches in each side, the left deviating slightly to that side and the right a trifle toward it. Uterine body felt to be broad and freely movable. Appendages apparently normal.

Operation.—Harper Hospital, Jan. 26, 1904. Vaginal septum excised with scissors, between two forceps (anterior and posterior), and edges cauterized with Paquelin cautery. The two cervixes were then successively dilated, and, after introducing and opening the dilator, with one jaw in each side to act as a

shield, the cautery knife was thrust between them into the uterine canal to the depth of about one inch, thus making one os uteri and cervical canal. The dilator was then withdrawn and the balance of the uterine septum cut through by small successive snips with a pair of long, curved, blunt-pointed scissors. The hemorrhage was quite insignificant. Examination with the curette showed the endometrium to be in a healthy condition on each side. The uterus was then swabbed with tincture of iodine, washed out, and both uterus and vagina packed with iodoform gauze.

The patient suffered no pain or discomfort from the operation. The gauze was removed on the fourth day, and carbolic acid and sulphate of zinc douches used while she was in the hospital. She sat up on the tenth day, and was discharged on the fifteenth.

Result.—Reported at office, April 6, 1904. Had had two menstrual periods since operation, both being less painful and flow more free than before operation. Examination showed the vagina well healed; cervix showed no signs of the operation, except that the os was a trifle larger than is usual in a nullipara, and the remains of the vaginal septum could be discerned on its anterior and posterior aspects. The uterine canal was free, and no remains of the septum could be felt with the sound, excepting a slight projection of tissue of about a quarter of an inch at the fundus, which marked the point of insertion of the septum.

NOTE.—Sept. 30, 1904, patient very well in every way and not suffering from dysmenorrhea.

DISCUSSION.

DR. C. S. BACON, Chicago, said that the obstacle to labor from the septum in the vagina is easily conceivable, but that he can see no reason for cutting the septum in the uterus on account of the pregnancy or to relieve any disturbance during labor. Menstrual difficulties seem to have been the reason for the operation, and it certainly seems remarkable that without further attempts to improve menstruation, ovaries that apparently were normal should be removed. Hematoma of the ovary is not a sufficient reason for removing it; hence, the case is open to criticism. Dr. Bacon said that it is hardly conceivable that a septum can be the cause of difficult menstruation, unless it acts as a mechanical obstruction.

DR. L. H. DUNNING, Indianapolis, has seen cases in which a septum in the uterus and vagina acted as an obstacle to menstruation; both women conceived and were delivered without any operative procedure. In both cases the septum was torn during labor. The first case occurred early in his career and he concluded to leave things to nature, especially as the septum was very thin. The septum was torn in both uterus and vagina, and no accident followed. In the second case the septum was thick and there was a wedge-shaped piece of tissue running from the external os up the cervix. The patient refused operative interference, and she had a very hard labor. The descending head tore its way through the septum, and, incidentally, through the cervix. Dr. Dunning doubts whether it can be laid down as a general rule that the septum in the uterus should be removed by operation. Malformations of the uterus may be found more often than we think. He has seen eight cases, two of them uterus bicornis, and the others of various kinds.

DR. H. T. JOHNSON, Washington, D. C., has seen one or two cases of partial double vagina, in which the trouble was overcome by snipping away the septum. He recalled the case of a woman living in the country who had a miscarriage. She came to the city to be curetted, on account of a more or less continuous flow after the miscarriage. She recovered from the operation, went to New York, and remained there for several months. In the meantime her abdomen increased gradually in size, but as it caused her no inconvenience she did nothing about it. One evening, however, she had a very severe pain and was taken to the hospital of Dr. L. G. Wylie, who delivered her of a five months fetus. Dr. Johnson could not explain it at all, as he had curetted thoroughly. Later he received a letter from Dr. Wylie describing a perfect double

uterus. The patient had had a miscarriage in one side of the uterus while a pregnancy existed in the other, and it was fortunate that he did not get the curette into the pregnant side.

DR. J. H. CARSTENS, Detroit, said that he had had similar cases in his practice. Eighteen years ago he attended a lady who had had a miscarriage. There was nothing unusual about it, but after six or eight months she had another miscarriage, and after a time she had a third miscarriage. The placenta was retained and he was obliged to remove it. Then he found that there was something wrong. The placenta was over on one side, but during his manipulation he found a septum extending down to the internal os, the external os being normal and the fundus normal; the septum was the only thing abnormal. Some months later he dilated the cervix with sponge tents and removed the entire septum, making one uterine cavity. In about three months she became pregnant again and was delivered of a full-term child. After that Dr. Carstens had a case of septum passing through the uterus and vagina. He removed the septum so as to make only one cavity. In order to prevent adhesions of the uterine walls after removing a septum, he always swabs out the uterine cavity with strong carbolic acid. He has had several cases where he could not operate because of the shape of the uterus, the fundus being depressed, making a sort of bicornate uterus. In order to make an operation permissible there must be only one septum and a normally-shaped uterus.

DR. W. B. DORSETT, St. Louis, operated on a case recently and found a double vagina and uterus. The patient was very fleshy and it occurred to him that it would be a rather hazardous procedure to carry the incision all the way up to the fundus, as he might enter the abdominal cavity, or it might have been a case of bicornate uterus and not merely a septum in the uterus, so he divided the septum in the vagina and as far as the internal os into the uterus. Several years ago he was called in consultation in a case of labor with a septum in the vagina. The child's head had come down well until it met this band, which prevented its further descent. He cut it and the labor proceeded without further trouble. These septa are not alike. Sometimes they consist merely of mucous membrane, while at other times they may contain some circular and longitudinal muscle fibers and frequently troublesome blood vessels.

DR. H. W. LONGYEAR said that the case reported by Dr. Dunning shows the beneficial results following division of the septum. Removing the ovary in the first case to stop menstruation was not advocated as a method of treating these cases. The removal of a normal ovary is always a subject for difference of opinion, but here was a case of abnormality in every way. The whole individual was abnormal; all the soft parts were abnormal, and the excruciating pain necessitated the administration of morphin for two weeks out of the month; and she was not a morphin fiend. He had had the opinion of an excellent practitioner who had been her physician, and he had no hesitation about removing the ovary, because the woman was a wreck and would continue to be such, apparently so long as the menstrual epoch continued to recur. Removal of the ovary was the simplest way to stop it. He had nothing to guide him in the matter, as he could not find anything in the literature. He hesitated to continue the division into the uterus, for the reason that there might have been a bicornate uterus and he might have gone into the abdominal cavity. He has wished since that he had done the same operation in this case as in the later one, before any organic changes took place in the first ovary. The patient consulted him for the relief of dysmenorrhea, and that is how he discovered them, although he did not operate solely to cure the dysmenorrhea, but to put the patients in a normal condition. Dr. Longyear knows of one case like Dr. Johnson's where infection occurred. The physician thought that he had curetted away everything, but the woman became septic, and it was then discovered that she had a double uterus, and he had curetted only one side. On making a thorough examination he found that the other side contained septic matter so that she apparently had a double miscarriage.