we approach the greatest possible similarity (namely that of marriage among members of the same immediate family), the tendency becomes greater to produce the lowest type of degeneracy. On the other hand, the greater the dissimilarity between the parents up to a certain point, the greater the tendency to produce an organism more vigorous than, and superior to, either of its parents. In the latter case there is also marked tendency to atavism. As the dissimilarity increases we may apparently look for precocity, rapid and exceptional intellectual development, together with the instability characteristic of the so-called superior degenerate. Great dissimilarity leads to wildness in the offspring, and extreme dissimilarity results in sterility. Mercier illustrates the tendency to atavism in fowls of dissimilar parentage, by Darwin's experiment of crossing the black Spanish with the silk-white fowl, and producing in the progeny a red plumage not appearing in either branch, excepting in the wild ancestor common to both. Here we have a stigma of far different type and bearing from the mental and physical results of inbreeding on the one hand, and the atavistic criminal tendencies of Lombroso on the other, neither, meantime, being of parallel significance, with the evolutionary spurt seen in the remarkable development of Broca's convolution in the individual with unusual command of language. And a still further type is found in the results of infection in the embryo. If one term must be chosen to include all types with their modifications and gradations, it seems unfortunate that a name should be chosen which has, of necessity, a sinister significance, by no means uniformly appropriate. In the light of such considerations the use of the term deviation may even contribute toward a better understanding of the complex conditions with which we are concerned. And even if the word fails of adoption, the discussion will at least tend to clear the atmosphere and to lessen the resentment inevitably aroused by the word degeneration.

Even certain illustrious sufferers from convulsions, and allied serious signs of constitutional taint, have possessed intellectual qualities so far superior, not only to the average, but to the best, that their careers have made epochs in history. And, to cite one from many possessors of less serious signs, what shall we say of Carlyle, who as a boy was shy, proud and pugnacious, with strong affections and violent antipathies, whose indigestion and whose eyestrain have been in turn deemed the cause of his unfortunate disposition, all, whatever their interaction, being probably only signs of a constitutional make-up which included a psychopathic endowment? In later life he became so highly sensitized as to declare war upon his neighbor's poultry, and to have constructed a sound-proof room for his labors, labors which were themselves upon the highest intellectual plane. Must we call him a superior degenerate?

The very expression superior degenerate is anomalous, for if we still deem the individual

inferior to the normal, superior is an inappropriate qualification to apply, and if we deem him equal or superior to the normal, the term degenerate is unfortunate. Indeed the expression almost suggests the query, if a superior degenerate is less degenerate than an inferior degenerate, what degree would the supreme degenerate represent?

The term deviation may cover all variations from the average normal, whether above or below, or at the same level, in the intellectual, physical, moral or other scale. Nor need it necessarily be limited to the lighter grades of variation, but we may have, if you like, the minor and major deviation, whereas, the more appropriate the term degeneration when applied to stigmata, to individuals, to families, or to races showing unquestioned downward tendency, the more reason there is for keeping the word within its proper limitations, and especially of replacing, as far as practicable, that self-contradictory and unnecessarily opprobrious designation, superior degenerate.

CANCER OF THE RECTUM: COMBINED ABDOMINAL AND PERINEAL OPERATION.¹

BY CHARLES A. POWERS, M.D., DENVER, COL.,

Professor of Surgery in the University of Denver; Surgeon to St. Luke's Hospital.

THAT the attempt at thoroughness which characterizes present operative procedure for cancer of the breast, lip, uterus and other organs, is extending to operations for cancer of the rectum seems to be manifest from the recent writings of Abbe, C. H. Mayo, Weir, Kocher, Kraske, Gaudier, Quenu, Trendelenberg, and others. No better exposition can be made of the dissatisfaction which surgeons have felt with perineal and sacral methods in high-seated rectal cancer than that of Mayo in the *Journal of The American Medical Association* for April 25, 1903, nor can a better plea be offered for the combined abdominal and perineal operation (which Mayo attributes to Gaudier of Lille) than that set forth by him. This latter procedure has the advantage of permitting the operation to suit the case: either a palliative colostomy or the radical removal of the growth *en masse* with incisions wide of the growth itself and embracing all glands, fat and connective tissue; together with this the retention of the sigmoid as a fecal container and the placing of a permanent anus in the iliac region where it is most easily borne and managed by the patient.

Errors of technique in the single case reported herewith may be of service to others who undertake the procedure. At the risk of being tedious the case itself is given at some length. It is presented at this early day purely as an operative illustration. I believe it to represent a type of operation which will gain in favor.

CASE. Mrs. W. Native of England. Forty-five years of age.

Previous history.—The patient has borne four chil-

¹ Read before the Colorado State Medical Society, October, 1903

dren, having no special trouble with any of them. She has had no symptoms referable to the genital tract. She was a well and strong woman up to six months ago, at which time she began to suffer from increasing constipation which was difficult to overcome by medicines. She found that her stools were getting smaller and painful, that a mucous rectal discharge began to appear. She went to a physician, who prescribed ordinary remedies. The difficulties increased, it became more and more troublesome to move the bowels and she began to lose in weight and strength. A little while ago she consulted Dr. M. Baker, who discovered a tumor of the rectum and kindly recommended her to me.

Present condition.—April 4, 1903. The patient is a rather spare woman five feet one inch in height. Her color is fairly good, she looks to be about forty-five years of age. Careful examination of the heart, lungs, kidneys and liver fails to disclose evidence of disease. Her appetite is fairly good, she eats moderately and digests well but has much difficulty in overcoming a chronic constipation. She says that the stools are small, ribbon-like, painful; that they are occasionally tinged with blood; that during the past few weeks there has been a thin rectal discharge. The bladder has given no trouble.

Local Examination.—A little above the anus there is an irregular, hard, nodular mass involving the circumference of the bowel and admitting with difficulty the end of the index finger. The finger crowded well up engages in the tumor. The tumor is movable and not particularly painful. The lower portion of it can be felt through the vagina, but the finger behind the neck of the uterus fails to define the upper limit of the mass. The uterus is in a posterior position, the tubes and ovaries are apparently healthy. Abdominal examination is negative.

Diagnosis.—Cancer of the rectum extending high. In view of the high seat and the good general condition of the patient combined abdominal and perineal excision was decided upon and the patient was carefully prepared with this in view.

Operation.—St. Luke's Hospital, 8:30 A.M., April 11, 1903. Chloroform was skillfully administered by Dr. F. W. Kenney. A short gridiron incision at the outer border of the left rectus permitted the introduction of an exploring finger. The rectal mass was felt low down. It was movable. No enlarged glands could be felt. Gauze packing was introduced into this incision. A median incision was rapidly made from the umbilicus to the pubes, the patient put in a high Trendelenberg position and the intestines carefully packed off. The uterus was drawn forward beneath the pubes. With wide lateral retraction the rectum was in easy view. It was again examined, confirming the exploratory palpation. A point in the sigmoid flexure was selected a little above the brim of the pelvis and the gut milked free of contents. Two heavy purse-string sutures of silk (according to Abbe) were rapidly applied; these were about two inches apart and involved the muscular coats of the gut. Midway between these purse-string sutures the gut was cut square across, the mesentery split down a little and the mesenteric vessels tied. Each end of the gut was then inverted and the purse-string stitches tightened. This completely shut off the lumen of each end of the gut from the operative field. Local packing was rapidly removed, the field sponged out, fresh packing applied and the instruments used in dividing the gut discarded. A comparatively clean operative area containing the two blunt rectal ends was now present. The lower end of the upper fragment was ready at any time to be brought out through the exploratory wound as an artificial anus. The mesentery of the upper end of the lower fragment was then divided downward until a point was reached at which the peritoneum began to shade off on the rectal sides. Here the peritoneum was split down a little on each side of the gut and then divided anteriorly. Below this point it was peeled up with a blunt scissors and the finger, thus rapidly separating the rectum. Posteriorly the superior hemorrhoidal artery was felt. This was doubly ligated; first with heavy catgut, after which the open mouth was picked up and tied with fine silk. Up to this point there had been but very little bleeding and from this time on the abdominal operative field was practically bloodless. The rectum

with its posterior fat, fascia and lymphatics was cleanly dissected from the hollow of the sacrum and worked free to the lowest possible point. This was about on a level with Douglas' cul-de-sac. An assistant now passed a long dressing forceps through the vagina up behind the neck of the uterus. The point of this was cut upon from the abdominal side, the vaginal wound enlarged, the upper end of the segment of the rectum and the entire mass which had been dissected free being caught and dislocated into the vagina.² The abdominal wound was washed and the pelvic peritoneum stitched up. This peritoneal suture was difficult. It was deep in the pelvis and I had neglected to preserve quite enough peritoneum to allow the edges to come together without tension. For this reason the peritoneal suture took longer than it should have done. When it was completed, however, the pelvic floor presented something the appearance of which it does after an abdominal hysterectomy, plus the presence of the uterus.

The lower end of the abdominal gut was brought out through the original lateral opening. The peritoneum on either side of the mesentery had to be cut a little to allow it to come up without tension. The abdominal packing was removed, the abdomen thoroughly flushed and the median incision sewn up. The gut was then rapidly stitched into the lateral opening, first by catgut stitches joining the edges of the parietal peritoneum to the visceral peritoneum. The purse-string stitch originally put in was removed and the mouth of the gut stitched to the skin. An occlusive dressing was applied to the median wound and a separate dressing to the artificial anus.

The patient was now placed in the lithotomy position, the buttocks well elevated, and the remainder of the operation completed from below. The upper portion of the lower fragment of gut was found in the vagina. The vaginal mucous membrane was split in the median line posteriorly and dissected from the rectum on either side. The anus having been sewn up, an incision was made encircling it and perineal excision of the rectum proceeded with from below, cutting widely on either side and posteriorly to the tip of the coccyx, working up in front of the coccyx and hugging it closely. In this way, keeping close to the coccyx and sacrum and dividing the posterior ligaments of the rectum, one was able to work up and meet the upper wound posteriorly. The rectum was then dissected up on either side, moderate downward traction being made on it. This was the most difficult part of the perineal operation; while working rapidly and with considerable traction the peritoneal stitches which had closed over the floor of the pelvis tore out and a loop of small intestine came down. This was pushed back with gauze and the rectum entirely removed. There was a fair degree of hemorrhage at the lower part of the perineal incision but practically none at the upper part. The only vessels which required ligation were the inferior hemorrhoidal arteries on either side. The wound was well flushed and the upper portion explored. An attempt was made to resuture the pelvic peritoneum from below but it was unsatisfactory. The wound was so deep that it was very difficult to get the peritoneal edges. As has been said, they did not come together easily from the abdominal side and as the patient had already been under chloroform over three hours it was judged wise to carefully pack off the pelvis. The vaginal mucous membrane was sewn up and a few perineal stitches put in. The cavity left in front of the sacrum and coccyx was a pretty big one. Laterally it was bounded by the obturator fascia. Its edges could not be approximated. It was lightly packed, in part with sterile gauze and in part with iodoform gauze and an ordinary perineal dressing applied.

The operation had been a long one, practically three hours and a half. The pulse was 72 at the beginning of the operation, it was the same throughout and at its close. But little blood was lost. But 15 drachms of chloroform were used. The patient was a thin and favorable subject and was in good condition. She was at all times under full surgical anesthesia and gave no trouble whatever. She was small of stature and the abdomen and rectum

² This mass in the male would be carried downward and backward toward the coccyx.

were particularly accessible. Perhaps fifteen minutes were lost in attempting to replace the peritoneal stitches which had been torn out.

The segment of gut measured 11½ inches in length in the fresh state. Four and three-quarters inches of this was above the upper margin of the tumor. The specimen was given to Dr. J. A. Wilder, pathologist to the hospital, who reports as follows.

"The specimen consists of 11½ inches of rectum with surrounding tissue and lymph nodes. The lumen of the rectum is partially occluded by an irregular nodular mass that begins 2½ inches above the anus and extends upward 4½ inches, involving the greater part of the circumference of the gut but being at all points well within the lines of incision. There are numerous lymph nodes in the connective tissue behind the segment of gut above the mass but no enlarged lymphatics are found near the upper end of the intestinal fragment. Microscopic examination shows the mass to be an adenocarcinoma. The lymph nodes show cancerous invasion."

The patient vomited pretty constantly for thirty-six hours after going back to bed. Her pulse at the end of thirty hours was 108, it then dropped to 98. Forty-eight hours after operation her stomach was quiet, she was beginning to take nourishment. During the first thirty hours five pints of salt solution were infused.

The subsequent course was smooth. The median abdominal stitches were taken out on the seventh day and at the same time the silk stitches fixing the gut at the site of the artificial anus were removed. The median wound had been kept clean and both wounds healed primarily. The bowels were freely moved on the fifth day. At no time was there abdominal distention. A part of the perineal packing was taken out on the fourth day, a little more each day thereafter and on the eighth day chloroform was given when the vaginal and perineal stitches were removed and the high gauze packing, that which had held the gut in place, carefully taken out. The sacro-perineal wound closed down gradually and completely. The patient began to be up and about in the usual length of time. It is now six months since the operation. She has gained in weight and strength. The artificial anus behaves well; indeed, the fact that the woman satisfactorily pursues the occupation of cook in a private family would seem good evidence of this. The gridiron incision allows a fair "pinch" to the gut.

Clinical Department.

CESAREAN SECTION FOR PLACENTA PREVIA IN A PRIMIPARA.

BY WILLIAM N. SWIFT, M.D., NEW BEDFORD, MASS.

Mrs. G. Thirty-four years. Married four years. Good family history. She had previous to her marriage been a school teacher and had been well. Menstruation regular. For six or seven years, rather profuse and with a great deal of pain. During pregnancy she had been well but had considerable abdominal soreness. Had no hemorrhages.

On May 11, 1903, had some abdominal pain and felt generally ill. Slept well that night, but the next morning had more cramps. Some of them quite severe. While sitting in a chair about one o'clock had a severe hemorrhage. It came on without warning and without pain. She said it felt as if something gave way. The hemorrhages continued and patient became faint. Dr.

John D. Hilton of South Swansea had charge of the case and called Dr. A. S. MacKnight of Fall River in consultation. Dr. MacKnight made a diagnosis of placenta previa and advised Cesarean section.

I saw the case about ten o'clock. The patient showed the effects of a loss of a large quantity of blood. Her pulse was rapid but regular and of fair quality. The vagina was full of blood-clots with constant flow of fresh blood. The cervix was not entirely taken up and only admitted one finger. A soft mass could be felt through the cervix. The child was a vertex presentation with the back to the right. Immediate section was advised as the only hope of saving the mother and the only possible chance of a living child.

I operated at eleven o'clock, assisted by Dr. A. Martin Pierce of New Bedford and Dr. John D. Hilton. Dr. MacKnight gave the ether.

An incision was made in the median line and the uterus delivered. The uterus was opened on its anterior surface and the child delivered.

The placenta was found to cover the whole of the os, possibly a little more of it being on the right side. The membranes and placenta were at once separated and delivered. The placental site was wiped off with gauze. A gauze pad was packed over the placental site with the end brought down into the vagina. The uterus contracted well. There was almost no loss of blood either from the incision of the uterine wall or the placental site. A continuous catgut suture was put through the uterine mucous membrane and including a little of the uterine muscle. The rest of the incision in the uterus was closed by interrupted catgut sutures through the peritoneal coat down to the continuous suture. The abdominal wall was closed with interrupted silk sutures through all the layers in order to gain time, as the patient's condition was not good. The gauze was taken out without hemorrhage following.

Patient was put to bed in fair condition, having had a hypodermic of strychn. sulph. gr. 1-30.

After stimulation and artificial respiration the baby (a girl weighing seven pounds) did well. The mother had very little lochial discharge. Her bowels were moved on the third day. She had very little rise in temperature and did well in every respect. Stitches taken out on the tenth day — one small stitch-hole abscess. Uterus freely movable, not adherent to abdominal wall.

On May 28 the patient had quite a severe hemorrhage. The nurse thought about a quart of blood. Patient was faint and nauseated. The hemorrhage did not recur. Patient is in good condition at present. Has menstruated regularly. The first few times rather profuse with some pain; now, less flow and very little pain. The mother had very little milk and the baby was fed. The baby has done well and is a strong, healthy girl.

My reason for reporting this case is its rarity. The conditions existing in this case, in my opinion, always demand Cesarean section if the patient's condition will permit, that is a primipara, with undilated cervix and central placenta previa. The operation was performed at the patient's house in the country by lamp light.

THE oil painting of Dr. Thomas G. Morton presented to the Pennsylvania Hospital by a number of contributors was unveiled on Jan. 11. The portrait was presented to the hospital by Dr. J. C. Wilson, on behalf of the Board of Trustees, and was accepted for the hospital by Dr. Arthur V. Meigs. Dr. Morton was connected with the institution for a period of forty years, many improvements and new buildings being added during this time as a result of his untiring efforts in its behalf. — *Medical News*.