TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, February, 1900.

The President, DE FOREST WILLARD, M.D., in the Chair.

ECHINOCOCCUS CYST OF THE LIVER.

DR. HIRAM R. LOUX reported a case of resection of the liver for echinococcus cyst as follows:

The patient was a German, aged thirty-one years, who two years ago, after some undue exercise, first experienced pain in right hypochondriac region, and soon thereafter discovered a hard mass in that region. He paid little or no attention to this until two months prior to his operation. When Dr. Loux was consulted in reference to this tumor, on examination, a hard, firm, somewhat nodular mass was felt in the right side just below the costal arch. By palpation the mass was freely movable. It had never occasioned any pain or discomfort except at the time when he first discovered the tumor. He has suffered somewhat, however, from indigestion. For some years past, his general health, as he states, has been below par, which he has attributed to the condition of his stomach.

An exploratory operation was advised, to which the patient consented, and on May 10, 1899, an incision was made over the most prominent portion of the tumor corresponding to the linea semilunaris. As soon as the abdomen was opened, it became clear that the tumor was hepatic. Its attachment was by a broad pedicle to the lower border of the left lobe of the liver. The tumor was somewhat firmly adherent to the adjacent tissues. After breaking up the adhesions and delivering the tumor through the abdominal wound, a resection of that portion of the liver structure to which the pedicle was attached was accomplished by the use of the Paquelin cautery. The peritoneal cavity was shut off by iodoform gauze, which was packed through the incision prior to the extirpation of the tumor. By burning through the liver

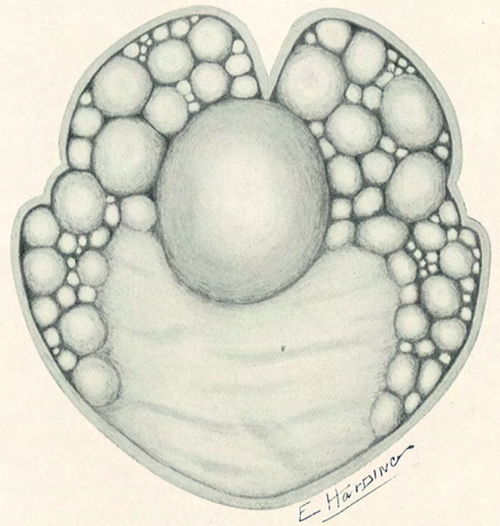

FIG. 1.—Hydatid cyst showing daughter cysts. In the lower part of the figure is a whitish mass containing parts of the wall of ruptured daughter cysts. The thick wall of the mother cyst is well shown. (Removed by Dr. H. R. Loux from liver of a man. The illustration is two-thirds the natural size. Weight, 197 grammes. The patient recovered.)

substance with the cautery heated to a dull red, about an inch and a half from the attachment of the pedicle of the tumor, there was no difficulty in controlling the bleeding. At points where the hæmorrhage was not arrested by the passage of the cautery, repeated applications of the point seared the surface superficially and arrested all bleeding.

The tumor was pear-shaped, eight centimetres in its longest diameter, five centimetres in its transverse diameter. Its weight 197 grammes.

The recovery was uninterrupted. The highest temperature was on the second day, when it reached $101^{2}/_{5}$° F. On the third day after the operation there was rather a free discharge of bile through the abdominal wound, which continued about fifteen days, and gradually ceased. The wound completely granulated and closed at the end of three weeks.

The pathological report showed that had the cyst been detached from the pedicle, and a portion of the liver not removed, there would have been a strong probability of recurrence, for the microscopical examination revealed the fact that the interior of the cyst wall contained a large number of brood-capsules filled with scolices and connected with the parenchymatous layer, a condition which would predispose to recurrence had the pedicle not been removed.

The pathological report by Professor Coplin is as follows:

Specimen.—Tumor removed from within peritoneum adherent to the liver.

Specimen consists of a pear-shaped mass of tissue eight centimetres in its longest diameter, five centimetres in its transverse diameter. Weight, 197 grammes. Its external surface is rough, apparently as a result of having been detached from the adjacent tissue. Two centimetres from the smaller end there is slight constriction, which would appear to divide the specimen into two masses. On section, however, this constriction is seen to be present only on the surface. On longitudinal section, the knife first cuts through a very dense capsule two centimetres in thickness. This capsule is remarkably uniform in thickness and texture. Immediately within the capsule we come in contact with a large number of cysts apparently free within a cavity, that is unattached, but surrounded by a homogeneous matrix which closely resembles at the periphery the coagulated white of an egg. As we approach

the centre of the growth it changes from a cloudy-white opacity to a gelatinoid material quite as clear as ordinary gelatin used for culture purposes. Running through this gelatinoid tissue are bands one to two millimetres in diameter which are slightly more opaque than the surrounding matrix, and resemble in color threads of dried agar-agar. In consistency the material is soft:

FIG. 2.—Echinococcus. A group of scolices. (From Dr. Loux's case.)

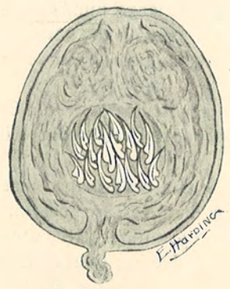

FIG. 3.—Echinococcus. Scolex; *a*, pedicle of attachment to endocyst. Just above are shown the somewhat disarranged hooklets. (From Dr. Loux's case.)

it cannot be picked up by the fingers, as, when this is attempted, it falls to pieces. Embedded within this are the cysts above mentioned. By gently pulling apart this gelatinoid material we are able to count sixteen of these small cysts. The smallest is not over two millimetres in diameter, the largest an egg-shaped mass

three and one-half centimetres in its longest diameter, two centimetres in its transverse diameter. These cysts are perfectly transparent, and when opened are found to contain a clear, watery fluid, faintly alkaline in reaction, specific gravity, 1.007, and containing a trace of albumen and sugar. The walls of the cysts are very thin, and no macroscopic measurement is possible. A few of the cysts have been opened and the contents examined microscopically. There were found a few large endothelioid cells, few leucocytes, and cholesterin crystals. The wall was examined without finding anything characteristic, but examination of a smaller cyst demonstrated the abundant presence of innumerable echinococcus hooklets.

A further examination of scrapings from the interior of a cyst wall demonstrated very beautifully the brood-capsules filled with scolices and connected to the parenchymatous layer, the picture constituting an almost prefect reproduction of the left hand capsule, Fig. 437, p. 558, Ziegler's "General Pathology," 1895, ed. English translation.

Dr. Loux also presented abstracts of twenty cases of operations for hydatid cysts of the liver, compiled by Max. R. Dinkelspiel.

CASE NO. 1.—*Reference,* O'Conor, *Glasgow Medical Journal,* Vol. xlvii, p. 347. Female, aged fifty-one years. *Nature, size, and duration,* hydatid cyst. *Method of removal,* hepatotomy, three-inches incision, slightly external to right, semilunar line. Trocar inserted. Blunt-pointed bistoury passed alongside of trocar and one-half-inch incision made into liver substance. *Result,* death on day following operation. *Remarks.* Enormous hæmorrhage arrested by sponge pressure.

CASE NO. 2.—*Reference,* Morgan, *London Lancet,* 1895, Vol. i, p. 344. Female, aged thirty-eight years. *Nature, size, and duration,* hydatid cyst; four years. *Method of removal,* vertical incision over tumor in right linea semilunaris; cyst wall dissected away with forceps. Bleeding stopped by ligatures and hot sponges. *Treatment of stump,* intraperitoneal. *Result,* recovery in three weeks. *Remarks.* Enough small cysts to fill a pint bowl; cysts varying in size from that of a pin's head to a cherry.

CASE NO. 3.—*Reference,* Loretta, *Mem. della R. accademia dell' Scienze dell' Instituto di Bologna,* 1886-1888, quarta tomo

viii, p. 581, in *Boston Medical and Surgical Journal,* April 28, 1892. Male, aged forty years. *Nature, size, and duration,* two years; echinococcus cyst; size of fœtal head. *Method of removal,* bistoury. *Treatment of stump,* edges of capsules of Glisson stitched together and also to abdominal wall. Collodion and iodoform dressing. *Result,* recovery. *Remarks.* Diagnosis, suspected echinococcus.

CASE No. 4.—*Reference,* Brazil, *London Lancet,* March, 1897, Vol. i, 624. Female, aged thirty-two years. *Nature, size, and duration,* hydatid cyst; duration about one and three-quarters years. *Method of removal,* first operation, October 4, 1886; no cyst found. October 13, 1886, incision three inches long over eighth rib in mid-axillary line; one inch of rib resected, leaving periosteum, and cyst wall removed. *Result,* recovery. *Remarks.* Two ounces of fluid evacuated.

CASE No. 5.—*Reference,* Bobroff, Khirurgia Mosk., in *Centralblatt für Chirurgie,* 1897, p. 1115. Female, aged twenty-five years. *Nature, size, and duration,* echinococcus alveolaris; four months' duration; fourteen centimetres in diameter, weight 200 grammes. *Method of removal,* excision; floor of excision still of tumor substance. Iodoform gauze tampons. *Treatment of stump,* extraperitoneal. *Result,* recovery in forty days. Recurrence. *Remarks.* Two previous childbirths followed by apparent right inguinal adenitis.

CASE No. 6.—*Reference,* Bruns, *Revue de Chirurgie,* No. 12, 1896, p. 976; *Beiträge klin. Chirurgie,* 1888; *Pennsylvania Medical Journal,* October, 1897. Female, aged forty-four years. *Nature, size, and duration,* echinococcus cyst in lobus quadratus. Size, child's head. Duration, seven months. *Method of removal,* cautery. Ligation of pedicle. *Treatment of stump,* disinfected with $HgCl_2$ and return to abdominal cavity. *Result,* recovery in nineteen days. *Remarks.* Diagnosis, tumor of mesentery or omentum.

CASE No. 7.—*Reference,* Garre, *Beiträge klin. Chirurgie,* 1888, Band iv, p. 181. Female, aged forty-four years. *Nature, size, and duration,* echinococcus cyst. *Method of removal,* thermo-cautery. *Treatment of stump,* returned to abdominal cavity. *Result,* recovery. *Remarks.* Tympanites.

CASE No. 8.—*Reference,* Landouzy and Segond, *Bulletin de la Société de Chirurgie de Paris,* 1887, No. 13, see *Pennsylvania*

Medical Journal, October, 1897. Male, aged fifteen years. *Nature, size, and duration,* echinoccoccus cyst. Duration, three months. *Method of removal,* abdominal section. Aspiration. Removal of cyst wall and liver tissue covering cyst. *Treatment of stump,* liver attached to abdominal wall by two silver sutures. Drainage. *Result,* recovery.

CASE No. 9.—*Reference,* Depage, *Gaz. hebd. de Méd. et de Chirurgie,* March 13, 1898, from ANNALS OF SURGERY, September 13, 1899. Female, aged twenty-two years. *Nature, size, and duration,* hydatid cyst in quadrate lobe, three others in left lobe, all size of the fist and of five years' duration. *Method of removal,* incision across rectus abdominis. Resection of part of left lobe with Paquelin cautery. Cyst in quadrate lobe enucleated; packing and drainage-tube. *Treatment of stump,* intraperitoneal. *Result,* recovery in fifteen days. *Remarks.* At first infection with Bacillus coli communis. Small fistula, which closed later.

CASE No. 10.—*Reference,* S. White, *British Medical Journal,* 1897, Vol. ii, p. 398, from ANNALS OF SURGERY, September, 1899. Male, aged seventeen years. *Nature, size, and duration,* "some time." Hydatid cyst under surface of left lobe. Size of a cocoanut. *Method of removal,* adhesion separated, cyst excised at base. Closure with six deep silk sutures. Hæmorrhage stopped by pressure. *Treatment of stump,* returned to peritoneal cavity. *Result,* recovery in short time. *Remarks.* Cyst dark red and looked like a malignant tumor during operation.

CASE No. 11.—*Reference,* Ruggi, *British Medical Journal,* April, 1892, p. 408. Female, aged twenty-two years. *Nature, size, and duration,* double echinococcus cyst; two years' duration; oblique diameter about nineteen centimetres. *Method of removal,* eighteen by ten inches of liver excised; vessels tied with catgut. *Treatment of stump,* edges of cavity sutured to the peritoneal edges of the abdominal wound. External treatment. *Result,* recovery. *Remarks.* Diagnosis, echinococcus of kidney.

CASE No. 12.—*Reference,* Palleroni, *Centralblatt für Chirurgie,* 1898, p. 1110; *Gaz. hebd. de Méd. et de Chir.,* 1898, p. 805. Female, aged fifty-five years. *Nature, size, and duration,* echinococcus cyst; size of hen's egg; adherent to gall-bladder. Noticed about one year. *Method of removal,* cyst dissected out and hæmorrhage arrested by tampons. Liver held to abdominal wall by silk thread. *Treatment of stump,* intraperitoneal. No drain-

age. *Result,* recovery. *Remarks.* Walls of cyst partially calcified.

CASE No. 13.—*Reference,* Igmio Tansini, *British Medical Journal,* 1891, Vol. i, p. 81. Female. *Nature, size, and duration,* hydatid cyst. *Method of removal,* total extirpation; excision of a portion of the liver. *Treatment of stump,* wound closed with sixteen sutures, some being catgut, others silk. *Result,* recovery within fourteen days. *Remarks.* No post-operative complications.

CASE No. 14.—*Reference,* Boggi, *Wiener med. Presse,* No. 21, 1889. Abstracted from "Progress of Medical Sciences," September, 1889, p. 300. Female. *Nature, size, and duration,* double echinococcus cyst weighing three pounds. *Method of removal,* enucleated. Resection of three inches of liver parenchyma. *Treatment of stump,* edges of liver cavity secured in abdominal wound. *Result,* recovery. *Remarks.* Free discharge of bile through the wound.

CASE No. 15.—*Reference,* Jones, *London Lancet,* 1894, Vol. i, p. 860. Female, aged twenty-one years. *Nature, size, and duration,* hydatid cyst six months, contained 124 ounces of fluid. *Method of removal,* incision middle line three inches long, one and one-half inches below ensiform cartilage; cyst incised and portion of cyst wall removed; drainage. *Treatment of stump,* cyst wall stitched to abdominal incision. *Result,* recovery four months. *Remarks.* Small pieces of cyst's wall came out of abdominal incision for four months.

CASE No. 16.—*Reference,* Vohtz, *Hospitals Tidende,* 1889. pp. 610-615. In ANNALS OF SURGERY, 1890, Vol. xi, p. 288 Female, aged twenty-one years. *Nature, size, and duration,* echinococcus cyst; size of child's head; duration "some time." *Method of removal,* excised with a portion of greatly atrophied liver tissue. *Treatment of stump,* intraperitoneal. *Result,* recovery.

CASE No. 17.—*Reference,* O'Conor, *Glasgow Medical Journal,* Vol. xlvii, p. 343. Male, aged ten years. *Nature, size, and duration,* large hydatid cyst. *Method of removal,* three-inches incision right semilunar line; trocar inserted and cyst evacuated. *Treatment of stump,* marsupialization. *Result,* recovery. *Remarks.* Ten pints fluid removed.

CASE No. 18.—*Reference,* Pozzi, *Gazette Méd. de Paris,* June,

30, 1888; also *Cong. Franc. de Chir. Proc. Verb.,* 1888, in *Boston Medical Journal,* April 28, 1892, p. 545. Female, aged thirty-four years. *Nature, size, and duration,* large echinococcus cyst. *Method of removal,* scissors. *Treatment of stump,* ligature, thermocautery, suture of liver in abdominal wound. Drainage. *Result,* recovery. *Remarks,* Discharge of bile and renewed liver tissue through drain.

CASE No. 19.—*Reference,* Smith, *Lancet,* February 18, 1887, Vol. i, p. 265. Female, aged forty-eight years. *Nature, size, and duration,* suspected hydatid cyst containing six ounces of fluid; five months' duration. *Method of removal,* No. 1 trocar and canula inserted into centre of fluctuating area. *Result,* rapid recovery. *Remarks.* No hooklets found.

CASE No. 20.—*Reference,* J. Chalmers Da Costa, present paper. Female, aged twenty-nine years. *Nature, size, and duration,* suppurative hydatid cyst. *Method of removal,* incised. *Result,* death.

Dr. Loux also submitted the following table showing the relative fatality when cysts are left to burst spontaneously, compiled by Cyr and published in the "Annals of Universal Medical Sciences," 1888, page 331.

In cysts bursting into peritoneum, 90 per cent. are fatal; into pleura, 80 per cent.; into bile ducts, 70 per cent.; into bronchial tubes, 57 per cent.; into stomach, 40 per cent.; into intestines, 16 per cent.; through abdominal walls, 10 per cent.

DR. W. M. L. COPLIN said that most of the echinococcus cysts which are met with by pathologists in this country are inspissated, that is, the parasite is dead, the fluid more or less completely absorbed, and the cavity occupied by a mass of detritus resembling the product caseation. Such cysts are not infrequently found post-mortem. In the last few years he had seen maybe four or five. The form of cyst that would be of interest to surgeons is the kind presented by Dr. Loux,—the true hydatid. Of these he had been fortunate enough to see a number. He had also seen one or two operations done with the belief that a hydatid was present, and although present it was not found. He recalled one in which numerous exploratory tappings were made without finding fluid, although Professor Bartholow was sure of the diagnosis. He followed the patient until he died and made the post-mortem. He found a cyst which contained a gallon

of fluid. The entire liver was in front of the cyst. Of course, all the tappings had been made into the hepatic structure. It was a case in which it would have been necessary to go entirely through the liver to find the cyst cavity; it could have been reached from behind. The cyst was unilocular, a simple hydatid. More commonly the cyst contains daughter and, quite often, grand-daughter cysts.

Of the symptomatology of hydatid cysts little is known. The patients of whom he had had any knowledge always complained of some digestive disturbance. The danger recognized by the older writers and by many of the older surgeons, where operation was never thought of, was suppuration. But why should suppuration occur? Commonly the cyst will form and progress with but few symptoms, or it may be none at all, and then suddenly all the phenomena usually associated with an intense infective lesion of the liver will occur. The suppurative process is shown by the usual evidences of intense infection. An operation at this time usually shows a suppurative cholangitis; sometimes the gall-bladder is involved; but usually it is a suppurative cholangitis following the course of the larger biliary ducts, even involving the smaller canals, and is occasionally mapped out upon the surface of the organ. Sometimes on the surface of the liver will be seen faint pencillings, the lines of infection as they travel along the course of the biliary and interlocular tissues. Commonly the lines of suppuration follow the course of the biliary canals. Investigation into the case to which he referred had led him to believe that the suppuration has not originated in the cyst, as was the older view, but that it is a suppurative cholangitis pure and simple. What relation the cyst has to it he did not know, unless it is that the cyst is a source of obstruction. We know that an obstruction of any amount in the gland is commonly followed by suppuration, often resulting from the most trifling causes. Very often a history of trauma in these cases is followed by suppurative cholangitis.

In the present cyst he had been able satisfactorily to demonstrate the brood-capsules with their contained scoleces. The capsules are all ruptured, but the scoleces are still in position. The specimen came into the laboratory at a time when the laboratories were in process of reconstruction, the buildings were torn down, and he could not try feeding experiments, but he did not doubt

that all the scoleces were still living. As illustrating the fact that where the patient develops hydatids without suppuration, or without inspissation or death of the parasite, there is absolutely nothing to hope for in any other treatment than that afforded by surgery, the observation of Leidy should be recalled. A cadaver came to the dissecting-room in the University. A student called Professor Leidy's attention to the cyst, and he was able to demonstrate that the brood-capsules were still living and able to infect, although the body was injected with chloride of zinc and had been preserved for a considerable time. Of course, if one cannot reach the parasite in the liver when a body is injected with chloride of zinc, post-mortem, not much can be expected from medical treatment during life. The usual course in nearly all of these cases is, with a trifling injury or without it, a suppurative cholangitis which terminates fatally. He had never known of an instance of suppurative cholangitis, of this origin, where the patient recovered.

PANCREATIC CYST.

Dr. John B. Deaver reported the case of a woman, aged fifty-eight years, who was admitted to the German Hospital, August 2, 1899, on account of an illness which had been developing during twelve or fifteen years. At first she noticed that she was losing her shape and was becoming stouter. This has kept up until the present time. She has always had regular habits; has never had attacks of epistaxis or hæmatemesis. Has suffered from small bleeding hæmorrhoids ever since the age of eighteen years. During the past few years has always been constipated, and at times has had some frequency and difficulty of micturition. Two years ago had a prolapse of the vagina, since which time she has used a vaginal stem pessary, which has relieved her. With all the above trouble she has felt in the best of health, took exercise regularly, and has always had a moderately good appetite.

On admission her temperature and pulse were normal. Heart and lungs clear. Her abdomen was greatly enlarged; fifty-two inches in circumference on a level with the umbilicus. The superficial veins were enlarged and tortuous, with apparently an increased fulness upon the right side high up. There was a general fluctuation, with deep-seated tympany in the right flank, with dulness but not flatness in the left flank, flatness anteriorly over the abdomen reaching as high as the ensiform cartilage;

the area of dulness not changed by any change of position. At a point two inches below and one to the left of the ensiform cartilage a thin plate of cartilage could be felt, apparently situated somewhat deeper than the abdominal wall. The liver was slightly diminished in size, and was pushed up as high as the fifth interspace anteriorly. Heart sounds, good; apex beat pushed slightly upward and to the left.

Operation, August 23.—Upon opening the abdomen, four gallons of a yellowish oily serum were evacuated, and a large cyst was revealed high up beneath the liver on the right side. The cyst was post-peritoneal, and was found to be adherent to the anterior abdominal wall. The peritoneal cavity was swabbed out with large pieces of sterile gauze; when dry it was packed with sterile gauze to maintain pressure upon the abdominal vessels. The abdominal incision was then continued upward to the left of the umbilicus, reaching within two inches of the ensiform cartilage. The abdomen was further explored to determine the advisability of removal of the cyst. Abdominal protective gauze removed and abdominal wound closed with drainage of pelvis. Cyst aspirated and about 500 cubic centimetres of fluid removed, the remaining portion being too thick to flow freely. The cyst wall was incised for a distance of one and one-half inches, allowing fully two and one-half quarts (2500 cubic centimetres) thick, fatty, yellowish fluid to escape (the cyst was about ten inches in diameter); its walls were thick and fibrous; at points there existed plates of cartilage which projected into the cavity. The cyst cavity was sponged dry, and finally packed with four large strips of iodoform gauze. A glass drainage-tube was inserted. Recovery followed.

Dr. Deaver said that the remarkable point in this case was that this trouble dated back twelve years, and, barring the size of the abdomen and the discomfort referred to the vagina and bladder and due to the pressure of the intra-abdominal fluid, she did not suffer any inconvenience; the bowels were regular; appetite good; she slept well, and, notwithstanding the fact that the heart and lungs were trespassed upon, she suffered no inconvenience referable to the chest. He had seen the patient recently, and found her feeling perfectly well.

Dr. Thomas S. K. Morton reported that the case of pancreatic cyst which he detailed to the Academy, March 6, 1899 (Annals of Surgery, June, 1899, p. 760), was still doing excellently. It was now more than eighteen months since the operation, and she had, some six months since, given birth to a healthy child. The cicatrix remains firm, and she experienced no complications or discomfort from her old trouble with the pancreas during or after the pregnancy. She has gained and retains much flesh.

CARCINOMA OF THE BREAST.

Dr. John B. Deaver presented a specimen of carcinoma of the breast removed from a woman, aged twenty-two, saying that the only point regarding the specimen of interest, other than the removal of the breast from so young a person, was the manner of removal. He cut wide of the growth, dissecting down on the great pectoral muscle, removing the sternal portion of it with the lesser pectoral, cleaning out the armpit, following up the vessels to the lower border of the collar-bone, the last step being the removal of the breast. The glands as far up as the collar-bone were infected. He had been struck by the amount of usefulness of the arm that shortly follows such operation. That is a point about which he was a little sceptical when he read the early reports of these operations to the effect that the function of the arm was very good. But he had the opportunity of observing one young woman who was operated three years ago and afterwards was employed in the German Hospital laundry. She could do as much work with the arm of the same side from which the breast was removed as she could with the other arm. He insists upon the patient using the arm.

As to the œdema which frequently follows the operation. Immediate œdema is not due to pressure on the axillary vein, but to the lack of support occasioned by the extensive dissection; œdema making its appearance later is usually the result of pressure upon the axillary vein from recurrent wall. He had seen a number of instances where œdema has appeared early; this has prompted him to allow the patients to use their arms early.

Dr. W. M. L. Coplin said that he had had an opportunity to watch a number of these cases dating back to the early "dinner-plate" operation of the late Professor Gross, for whom he did pathological work. The later results, statistical and from a pathological stand-point, fully justify the wide operations which modern surgeons are making. The necessity of avoiding the track of invasion, from a pathologist's stand-point, is eminently proper. No matter whether one believes in the microbic origin of car-

cinoma or that it is a form of cellular parasitism, the track must be avoided. A surgeon would not think of making an amputation through the line of infection if it could be avoided, and the wisdom of avoiding the track of invasion in cancer seems to be equally important.

There is one point with regard to these tracks of invasion which physiologists have only partly worked out, viz., anomalous distribution of the lymphatics or unusual lymphatic connection. He had seen one case of anomalous track of invasion in which primary cancer of the lower and outer quadrant of the mammary gland was associated with glandular enlargement in the supra-clavicular fossa without axillary involvement. The patient was first operated on in Europe, and was afterwards in charge of the last Professor Gross. In this case the axilla was cleaned out,—the second operation,—and there was no axillary glandular involvement, although such involvement was present along the course of the lymphatics above the clavicle and in the gland back of the sterno-cleido-mastoid muscle. Cancer is also seen occurring in the genital organs and associated with retroperitoneal invasion, the glands of the groin escaping. Such anomalous distribution of the lymphatics and distribution of recurrences are probably to be accounted for as due to congenital peculiarities, although the view may be taken that occlusion of the lymph stream travelling towards the axilla may lead to collateral dissemination.

CARCINOMA OF THE RECTUM.

Dr. Deaver presented four specimens of carcinoma of the rectum, all removed by a modified Kraske operation. All made uneventful recoveries. Two of the patients in whom he succeeded in suturing the divided bowel had sphincteric action; the other patients had not. He had already put himself on record as against preliminary colotomy in an operation for the removal of the rectum in the majority of cases. None of these cases were very sick after the operation. He had never seen the loss of very much blood in this operation, and he thought that the reason of this was that he took out the lower three or four segments of the sacrum, dividing the bone transversely with chisel; then with a pair of scissors curved on the flap, hugged the under surface, cutting the ligaments and dividing the blood-vessels near their termination.