and it is therefore justifiable to add the phenolphthalein directly to the contents already containing the alcoholic solution of "dimethyl." The amount of error in adding the few drops of the alcoholic solutions to the aqueous stomach contents is negligible for clinical purposes, as may readily be proved by adding the same number of drops of alcohol to a tube almost full of water.

It is well to have two control tubes, or one control tube with a paraffin "partition" in the middle, with the end reaction of the "dimethyl" below and the end reaction of the phenolphthalein above the partition. This tube should be of the same diameter as the burette; the liquid may be made of about the same opacity as the stomach contents with dilute starch paste and the tube finally sealed to prevent the access of air. This, of course, is a valuable standard for comparison and will not change, with proper precautions, as the appreciation of the eye for colors will.

I claim for this modified method the following advantages: Simplicity, economy, greater accuracy than the usual method, saving of time, and cleanliness.

716 Alaska Building.

CASE OF POISONING BY FORMALDEHYD

A. J. BOWER, A.B., M.D.

GREENVILLE, MICH.

Owing to its intensely irritant properties, formaldehyd is rarely used for suicidal purposes, and few cases of poisoning with this substance have been recorded. In the literature at my disposal I find two fatal cases reported, one of which is described by L. A. Levison¹ in 1904. In that case the patient swallowed between two and three ounces of commercial formaldehyd and died in collapse about twenty minutes later. Autopsy showed the mucosa of the lower part of the esophagus, stomach and first portion of the duodenum to be dark, chocolate brown in color, and of the consistency of leather. There was an excessive amount of mucus in the bronchi.

On account of the small number of cases of poisoning with formaldehyd I have thought it advisable to report this case in detail:

Patient.—Miss M. S., aged 20, swallowed about a half an ounce of formalin. I saw her about twenty minutes later; she was sitting up, not complaining of any pain; pulse was 106 and of good quality.

Treatment and Result.—Lavage of the stomach was done, there being a strong odor of formaldehyd to the first washings. Immediately after the removal of the tube the patient fell to the floor in a condition of collapse, with loss of consciousness, pallor, irregular pulse, and coldness of the body and extremities. Strychnin was administered, and after several minutes consciousness was partially regained, and she complained for the first time of pain in the throat and stomach, the latter being paroxysmal in nature. The patient vomited twice, the vomitus being small in amount and containing blood. Demulcents, such as milk and the whites of eggs, were administered; an ounce of castor oil was given, by the tube, for both its demulcent and cathartic effects. The patient was stimulated with strychnin, gr. 1/30 being given hypodermatically, three doses in the first hour, then continued every three hours for twenty-four hours. About six ounces of lime-water was given every two hours alternating with a glassful of water containing a dram of sodium bicarbonate. A diuretic mixture was given every two to four hours containing ten grains each of the acetate and citrate of potassium to the dose.

Subsequent History.—The patient lay in this stuporous, semi-conscious condition for about thirty hours, showing a slight gradual clearing up of her physical and mental condition. During this time she was entirely unable to speak; she could understand conversation, but was unable to reply, the muscles of her mouth making labored, but fruitless movements. The tongue could not be protruded beyond the teeth, but could be seen to be reddened and swollen. The eyes could be opened only with great difficulty. After about thirty-six hours she regained the power of speech, talking at first slowly, and with difficulty. When questioned regarding pain, she said there had been no constant pain, except in the throat, and it was not severe there; there was pain in the esophagus and stomach at varying intervals, not of long duration, nor severe except at first. She could not describe the nature of the pain definitely, but considered it more as a heavy, dull, aching than as a smarting or burning. The further recovery of the patient was rather rapid. She was able to be out of bed in about four days, and in a week she went to her home forty miles away.

A surprising feature was the slight amount of kidney disturbance. A specimen obtained thirty hours after taking the poison showed a turbid, grayish-yellow urine, with a specific gravity of 1.019, amphoteric reaction, with no albumin (or sugar); there was a heavy sediment consisting mainly of triple and amorphous phosphates, with but few epithelial cells or leucocytes. Two days later the urine was nearly normal, except for an alkaline reaction, probably due to diuretics given, the presence of phosphates and many epithelial cells.

MALIGNANT ENDOCARDITIS FOLLOWING CHANCROID

I. FRANKLIN COHN, M.D.

Assistant Surgeon, U. S. Navy
MARE ISLAND, CAL.

The following case is considered to be of interest as it illustrates a somewhat unusual method of the development of malignant endocarditis, the micro-organisms gaining access to the circulation through the ulceration of a chancreoid:

Patient.—O. W. W., fireman second class, U. S. Navy, was admitted to the U. S. Naval Hospital, Mare Island, Cal., on Dec. 19, 1908, as affected with "chancreoid." There was no co-existing gonorrhea.

History.—The patient was 29 years old, single, had had about ten months' naval service, and had never been on the sick list since enlisting. He was formerly employed as a railroad brakeman. He used alcoholic drinks excessively some years previously; tobacco, moderately. He stated that he had an attack of "typhoid-pneumonia" three years ago and that he had always enjoyed excellent health since that time. He denied any previous venereal history or ever having had rheumatism.

Course of Disease.—On admission he presented an annular ulcerating chancreoid surrounding the meatus. The inguinal glands were not involved. Healing was fairly rapid under treatment by applications of crystals of copper sulphate. On December 24 he suddenly developed severe cardiac symptoms; temperature, 101.2; pulse, 136; respirations, 52. The heart was found to be enlarged downward and toward the right and left sides. Auscultation revealed a diastolic murmur at the second right costal cartilage, transmitted toward the apex. The pulse was distinctly of the Corrigan type. The diagnosis was then changed to *cordis valvularum morbus* (cardiac valvular disease—aortic regurgitation). The septic condition gradually became worse, the temperature ranging from 100 to 103; pulse, 120 to 140; respirations, 40 to 60. A large area of impaired resonance, approaching dulness, was noticed over the lower lobe of the left lung, anteriorly and laterally. The usual measures used in the treatment of acute endocarditis failed to give any relief. The white blood count ranged from 20,000 to 40,000. A purulent pericarditis was

1. THE JOURNAL, JUNE 4, 1904, xlii, 1492.

suspected and on Jan. 5, 1909, a paracentesis of the pericardium was performed under local anesthesia (ethyl chlorid) but no fluid was obtained. The patient's condition rapidly grew worse, all symptoms increasing in severity and the dyspnea became intense (respirations, 60). The leucocyte count reached 89,000. The septic condition was then believed to be due only to a pyogenic infection of the aortic valves. Death occurred on the evening of January 7.

Autopsy.—This revealed a large mass of fleshy, vegetative excrescences on the aortic valves, about the size of the end of the thumb. When these were removed for the purpose of making sections, a considerable amount of thick, yellow pus exuded from beneath the leaflets. Both pleural cavities were almost entirely obliterated by dense adhesions, undoubtedly the result of a pleuritis following the previous attack of "typhoid-pneumonia." The liver and spleen were both enlarged and congested, the latter organ showing evidences of amyloid degeneration. Cultures were made from the pus obtained from the aortic lesion and from the chancreoid, and the same organism (*Staphylococcus pyogenes aureus*) was isolated in pure culture from both localities. Stained sections of the diseased valves showed numerous purulent foci.

The fact that the chancreoid was the only perceptible abrasion on the body surface, the isolation of the same organism in pure culture from both places, and the sudden onset of the septic condition following the chancreoid infection, all seem to indicate that the malignant endocarditis was the sequel of the venereal infection.

U. S. Naval Hospital.

INTESTINAL RESECTION WITH END-TO-END ANASTOMOSIS BY PARKER-KERR METHOD: RECOVERY

SCOTT D. BRECKINRIDGE, M.D.

WASHINGTON, D. C.

Patient.—A colored man, aged 31, was brought into Providence Hospital by Dr. Scott, of Anacostia, Dec. 5, 1908, for immediate operation for a strangulated left inguinal hernia, the strangulation being of about twelve hours' duration.

Operation.—The hernia was exposed and the sac incised in the usual manner, the contents consisting of twelve inches of gangrenous small intestine and a small portion of the omentum which was adherent to the bottom of the sac. The intestine failing to react to the application of hot saline solution, the narrow clamps adopted by Parker and Kerr¹ in their work were applied transversely to the axis of the intestine, one inch outside of the gangrenous portion, and resection performed. A Cushing continuous right-angled suture (the "basting-stitch" of Parker and Kerr) was then applied over the clamps; the clamps were withdrawn, and the "basting-stitches" drawn taut, perfect invagination resulting. End-to-end anastomosis was then performed by means of a silk continuous Lembert suture, reinforced by two or three interrupted Lembert stitches of the same material. The "basting-stitches" were then cut short and withdrawn without the slightest difficulty. The line of anastomosis was rolled between the thumb and finger to open the lumen and a portion of the intestinal wall invaginated through the anastomosis to test its patency. The intestine was then returned to the abdominal cavity and the wound closed.

Postoperative History.—The patient vomited once after the anesthetic and at no time suffered from distention or from any disturbing symptom. His temperature and pulse reached normal on the third day and he made an uneventful recovery, being discharged well a little over three weeks after the operation.

I place particular emphasis on the perfect invagination action of the "basting-stitches" and the perfect ease

with which they were withdrawn after the completion of the anastomosis. This "closed" method is undoubtedly cleaner and, in my opinion, simpler than the ordinary methods by use of clamp and suture, or Murphy button.

A PERMANENT APPENDICULAR VESICO- CECAL FISTULA

R. CADWALLADER, M.D.

SAN FRANCISCO

The following case report shows one result of appendicitis:

History.—A girl, aged 20, was brought to me with the following history: She was the child of healthy parents, a normal baby with a normal history. She had had the usual diseases of childhood. When she was about eight I treated her for persistent bed-wetting. The usual remedies gave little benefit, and, while my records are now lost, I remember telling her mother that I thought it would end at puberty. There was no congenital malformation of any kind. Menstruation began when she was eleven in a perfectly normal manner and, as expected, the enuresis ceased. Soon after this, when about 12 years old, she noticed that a considerable quantity of mucus and pus was passing in the urine at times, with soreness of the bladder. This was more marked when the bowels were loose. With this there was for years a history of colicky pain in the abdomen, but at no time did it confine her to bed or simulate an acute attack of appendicitis. About three years ago this extraneous matter was found to be fecal in nature and is thought by her to have been occasionally passed for the greater part of her life. It was never constant and was usually the seeds of fruit, husks of grain, mucous and brown colored debris. It was not always of fecal odor. At times there was the passage of gas with the urine, of decidedly fecal odor and considerable noise, and she feels sure that several times there was urination from the bowel. With this history she was sent to me for operation.

Diagnosis.—I will pass quickly over the many tests by which I tried to establish all this as true. Inflation of the intestine and bladder were without success. Iron by mouth could not be found in the urine nor did methylene blue escape by the rectum. For days nothing would appear and then the catheter would bring blackberry seeds, pearl barley, or striped muscle fibers in accord with her diet. I used the Kelly cystoscope and made out the ureteral openings and most of the bladder wall to be normal and uninflamed. Dr. John C. Spencer was called in and we used the Nitze instrument and satisfied ourselves that there was nothing abnormal in base or walls except a spot on the fundus that might be an opening. Here was a dark patch or crater at one spot of the border of which was some inflammatory tissue. It was not conclusive but I decided to clear up the mystery by a laparotomy and even open the bladder if nothing was found in the abdomen to account for the symptoms.

Operation.—On January 3, with the assistance of Dr. Campbell Ford, I opened the abdomen and found first a large adhesion of the ileum to the fundus which was carefully separated but which did not communicate with the bladder. Under this we found the tip of the appendix adherent to the bladder at about the peritoneal reflexion over the uterus in the median line. The tip was embedded in the wall and seemed to form a part of it. It was about 7 cm. long and uniform in diameter. The succeeding steps were simple. A cuff of peritoneum and muscle was turned from either end and the median part cut away; the stumps were disinfected, the cuffs were ligated over the stumps and the abdomen was closed with the Ford stitch. Recovery was absolutely without interest and the patient left the bed a week later.

Were it not for the adhesion found I should be inclined to consider the condition congenital, but in the only other case like this, that of Keen's, I find that he

1. Parker, Edward Mason, and Kerr, Harry Hyland: Intestinal Anastomosis without Open Incision, by Means of Basting-Stitches, Johns Hopkins Hosp. Bull., May, 1908