standing, strongly exerts herself in "forcing" the uterus, that organ descends to the level of the labiæ. September 22, 1890, operation by laparotomy and suture as in cases 1, 2 and 3 detailed. Two silver wire womb sutures and two catgut sutures over each ligamentum rotunda; no mutilation of parts; incision closed and wound dressed as before. Sutures removed in the usual time. Examination of the synoptic chart preserved in this case shows in most remarkable manner how slight the disturbance following this operation may be in well conducted cases. The highest temperature noted during the times for which the record is kept occurred on the evening of the first day, and was $99\frac{1}{2}^{\circ}$ F.; the highest pulse rate 100, same date and same hour. Opium was withheld. Nor was there sufficient pain, as a result of the operation, at any time, to make excuse for its use possible. The intestine was regularly and freely evacuated by the use of calomel and drastic enemata. The patient was permitted to relieve herself of urine over the pan. The cases were all treated at their homes, but nursed by intelligent and trained nurses. The strictest aseptic precautions were in all respects observed.

The first, second, and last cases offer us good examples of their kind where this important surgical interference is demanded, and the test of efficiency of method has been, for each one of these operations, severely tried; and we may now claim reasonably that sufficient time has elapsed to enable us to claim cures. The remaining case was probably not so carefully selected for operation, and not so well understood, partaking in its character of neuroses derived through gastric derangement and digestive disorder.

THE AFTER-TREATMENT OF CASES OF ABDOMINAL SECTION.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May 1891.

BY CHARLES P. NOBLE, M.D.,
SURGEON IN CHARGE OF KENSINGTON HOSPITAL FOR WOMEN,
PHILADELPHIA.

According to Oliver Wendell Holmes, to successfully treat an individual one should begin with the grandfather. The same principle applies to the successful after-treatment of cases of abdominal section. Whenever possible, careful preparatory treatment should be carried out. Nutrition should be improved, when depraved; the enunctories should be made active, especially the bowels and skin. Operation should be rapid, careful and thorough. Diseased, and especially suppurating, structures should receive most careful attention, and unless vital, organs be completely removed. Asepsis in clean operations, and irrigation and drainage in dirty operations,

are essentials. Under such conditions, unless operation has been made a last resort, or the vital organs of the individual are seriously crippled, proper after-treatment of cases of abdominal section will insure a successful result quite uniformly.

That which is accomplished by after-treatment in cases of abdominal section is principally of a negative character. The object is to protect the patient from all sources of danger, while nature does her perfect work. The most positive ends accomplished are: to sustain the powers of life to enable the patient to pass a crisis; to keep the enunctories active; and to prevent wound secretions from becoming a source of poison.

The after-treatment of typical cases of abdominal section is extremely simple. By typical cases I mean those in which the operation has been done satisfactorily, without special loss of blood, and in which the patient goes to bed without marked shock.

The room in which the patient is to remain should be airy, well lighted, and ventilated. The bed, preferably should be single, and of such a height that the woven wire mattress is two feet above the floor. A hair mattress is the best. The bed should be made warm during the operation by having hot water cans or bottles placed in it. These should remain about the patient until reaction is complete—care being taken to avoid burning the patient.

Diet.—During the first twenty-four hours nothing should be given. Rinsing the mouth with water will relieve thirst partly. If thirst is excessive, enemata of beef tea, eight ounces or a pint, may be given every four hours. This should relieve systemic thirst; but it will not relieve thirst due to a dry mouth or throat. On the second day one or two drachms of water every half hour may be given, to be increased or withheld according to the tolerance of the stomach. After thirty-six or forty-eight hours beef tea, one or two drachms, or an equal amount of milk and lime water or soda water may be given; and increased if well borne, the frequency of administration being decreased. If all goes well, on the fourth or fifth day water, practically *ad libitum*, may be given. After a week soft diet may be given, and after two weeks full diet.

Drainage Tube, and the Abdominal Wound.—In my judgment the drainage tube should be used unless there is some special contra-indication. If the drainage is not excessive, nor bleeding going on, it is best to surround the tube with sterilized cotton; with the bandage over all. In this way the tube is protected against infection between dressings. A rope of bi-chloride wet gauze should be passed down the tube to Douglas' pouch, and extend externally into the absorbent cotton. Used in this way most of the fluid poured out into the pelvis will escape by

capillary action, and draining the tube will be unnecessary more than twice or three times in twenty-four hours. In this way the tube can be managed by the surgeon. All soiled cotton should be removed at each dressing, and the outside of the tube be kept aseptic by washing with sublimate solution. It is well also to keep the gauze over the wound wet with bi-chloride solution, until the tube is removed. In draining the tube, the rope of gauze is removed, a pledget of aseptic cotton is seized with an aseptic forceps and passed down the tube. This is repeated until all fluid is removed. When the pelvis has been made dry, it is well to pass one pledget saturated with sublimate solution. The wet sublimate gauze drain is next inserted, and the cotton and bandage readjusted. This method of managing the tube has given perfect satisfaction in typical cases.

When drainage is excessive or hæmorrhage is going on, it is better to use the rubber dam about the tube, having it project through the bandage; this way it is more accessible for draining. The chances of infection are also greater. In this class of cases the tube must be drained often—even every fifteen or thirty minutes in case of bleeding. The piston syringe may be used to remove fluid; but I have found it unsatisfactory. It will not remove all fluid from Douglass' pouch.

The tube should be removed when the drainage ceases to saturate the gauze rope in the tube, especially if the drainage has become serous. In most cases the tube will remain in from one to three days. When the tube is removed early, the wound should be closed by tying a provisional stitch introduced during the operation. If for any reason it has been necessary to use the tube five or six days or more, it should be elevated from day to day, perhaps a shorter one substituted, and finally a plug of gauze, inserted through the abdominal wound, be used. In this way a sinus can at times be prevented. In such cases the judicious use of sublimate solution, and the peroxide of hydrogen solution within the tube track is of great value. These agents should be used on cotton carried down the tube in the grasp of a forceps.

The hands of the surgeon must be made aseptic before each dressing of the tube, and the tube forceps must be kept aseptic. By having the forceps well nickle-plated it can be washed before use in sublimate solution. After use it should be carefully washed with soap and water. With a little practice the surgeon can drain the tube with but little use of his fingers. Only the thumb and forefinger of the left hand need come in contact with the cotton or that part of the tube forceps which passes down the tube. The method employed is as follows: small rolls of absorbent cotton are wrapped in tissue paper, and sterilized

in the steam sterilizer. A roll of cotton partly unwrapped is held by the nurse, the tissue paper serving to keep her fingers from touching the cotton. A pledget of cotton is seized by the tube forceps, lightly wrapped about the forceps by the thumb and index finger of the left hand, and then passed down the tube. It may or may not be necessary to steady the tube. The process is repeated until the pelvis is dry. It is manifest that if special care is taken in cleaning one thumb and forefinger that asepsis can be maintained. And this can be done with little expenditure of time.

A satisfactory method of dressing the wound is to use a wet sublimate gauze dressing until the tube is removed, and then to apply a powder consisting of iodoform one part, and boric acid seven parts. The deep sutures should be removed on the seventh or eighth day; at which time the wound should be supported with adhesive straps. Some days later the superficial stitches may be taken out.

The Bladder.—It is best to encourage the patient to void urine. When necessary the catheter must be used. Every care should be taken to avoid catheter cystitis. This is best accomplished by using a glass catheter, having it carefully washed in running water after use, and kept in sublimate solution until needed again. Before the catheter is used the vestibule should be wiped dry with absorbent cotton. Then the catheter, properly lubricated with vaseline, should be introduced, the parts being exposed.

The Bowels.—The bowels should be moved early—the second or third day. I believe that the pain after abdominal section is largely intestinal—due to flatus, or to irregular peristalsis—and that the best way to relieve it, is to open the bowels. The plan of giving a brisk cathartic shortly before operation so as to secure an early evacuation of the bowels, commends itself to my judgment, though I have not employed it. On the second or third day an enema is given; and should this fail, calomel in twelfth-grain doses, every half hour, or concentrated citrate of magnesia solution. (Four ounces equals one pint of official). Epsom and rochelle salts have proved too nauseating for my patients.

As an enema the following is used: Magnesia sulphet., two ounces. Ol. terebinth, one-half ounce. Glycerini, two ounces. Aquæ, q. s. ad., four ounces. This mixture is a very reliable purgative enema.

The bowels should be kept open at least on alternate days throughout the convalescence. Special care should be taken to prevent the accumulation of scybalous masses.

General Care, especially by the Nurse.—During the first few days, or period of thirst and pain, the patient should be encouraged to bear up, and be told that pain is quite the rule after abdomi-

nal section. Nervous, fretful patients must be impressed with the fact that nothing will be given that is not thought good for them, and that personal teasing appeals will avail nothing. As a rule, a good *morale* can be thus established. The nurse can do much to promote the comfort of the patient. During the period of thirst the face and hands should be bathed frequently with ice water or cold water and alcohol. And the mouth should be rinsed frequently with ice water or a weak solution of permanganate of potassium, or of peroxide of hydrogen. Glycerine and ice water will at times relieve "dry mouth" but generally the sweet taste of the glycerine is objectionable. The nurse should be given the rectal tube, and should use it whenever pain from flatus is present.

The bed ought to be kept strictly clean, and the sheets be kept smooth. The draw sheets and the bandages should be changed at least twice daily. The patient's back should be rubbed well with alcohol or soap liniment two or three times daily. She should be allowed to flex the legs and thighs, when the legs can be comfortably supported by placing a small pillow under the knees. Cotton wool pads or an air cushion should be provided to ease the back. Attention to these details adds much to a patient's comfort.

I believe that it is best to keep patients on their backs for two weeks after abdominal section. During the first week comfort is best attained by avoiding all motion. After eight or ten days the use of the bed rest permits sufficient change in position. After three weeks the patient may be permitted to sit up in bed. Hernias are best avoided by careful suturing, and by rest until firm union has occurred.

COMPLICATED CASES.

Shock.—Shock is met best by the application of external heat, the use of strychnia, digitalis, caffeine, and whisky hypodermically, and of decoction of coffee or beef tea by rectal enema. Within eight hours, thirty minims of the tr. of digitalis, one-eighth of a grain of sulphate of strychnia, and two or three grains of the citrate of caffeine may be given. If recovery is not prompt, one-half of a grain of the sulphate of strychnia, and one drachm of tr. of digitalis may be given in twenty-four hours, and an enema of beef tea, eight ounces to one pint, with whisky, one or two ounces, may be given every two or four hours. This treatment can be continued for some days. If much blood has been lost, large amounts of fluid will be absorbed from the rectum. A saline solution, also, may be injected into the areolar tissue under the skin. After one or two days, if rectal feeding is necessary, a more nutritious mixture should be substituted. I have used the following:

One egg; milk eight ounces; peptonize and add whisky one or two ounces. This quantity can be given by enema every six hours. If rectal feeding is kept up for many days, it is well to wash out the rectum daily with soap suds, so as to remove decomposing material, and prevent proctitis.

Vomiting.—Vomiting from ether cures itself. When vomiting continues more than two days, some other cause must be sought. If not excessive, vomiting will usually cease if no fluids are given by the mouth. A mustard plaster over the epigastrium, or a tumbler full of hot water will at times arrest it. If simple means fail, it will be found that the vomiting is due to peritonitis, or to impending obstruction of the bowels. In either case the bowels should be moved at all hazards. This is accomplished best by the use of the purgative enema already noted, given if necessary through the rectal tube into the colon. Broken doses of calomel can be given when other purgatives are rejected. Concentrated solution of citrate of magnesia, and seidlitz powders also can be used. The continued use of these agents usually will open the bowels. Secondary abdominal section for the relief of obstruction should not be undertaken too quickly, as not infrequently the bowels are moved only after repeated efforts; and moreover, the results of the secondary operation are not encouraging.

Fever.—When fever occurs the bowels should be kept freely open, and the body be sponged freely with cool water. The use of antipyretics is of doubtful value. When to re-open the abdomen for peritonitis, and when to trust to medical measures is a difficult problem. In general, when the skin is dry, the face flushed, and the pulse full and bounding, secondary operation will be unnecessary; but when the skin is "leaky," the extremities cool, and the pulse rapid and feeble, absorption of septic material is going on and operation is indicated. Unfortunately, the result usually is death.

Opium.—The use of opium in any form in typical cases of abdominal section is unnecessary. A little encouragement during the first day or two will enable the patient to stand the pain, and later it is quite bearable. Occasionally morphia is useful when a nervous patient becomes much excited and cannot otherwise be controlled. I feel convinced that the experience of the past few years has demonstrated the fallacy of the doctrine that opium is curative in peritonitis; and that it finds its legitimate field in abdominal surgery in combating extreme nervous excitation, and in easing the last hours of the dying. Occasionally it may be used temporarily to relieve extreme pain.

Asthenia.—Asthenia must be combatted by the systematic use of nutritive enemata with whisky, together with the administration of such liquid

food as the stomach will bear. Champagne can often be given with advantage when other stimulants are rejected. Less can be done to combat asthenia by alimentation and medication after abdominal section than after other operations, because as a rule the stomach is not available. The fate of the patient is decided, in general, when the operation is completed.

"PYOK'TANIN" AS AN ANTISEPTIC.

Read by Title in the Section of Obstetrics and Diseases of Women, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

BY H. J. BOLDT, M.D.,

OF NEW YORK.

PROFESSOR OF GYNECOLOGY, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; GYNECOLOGIST TO ST. MARK'S HOSPITAL AND THE GERMAN POLYKLINIK.

Among the remedies introduced as antiseptics lately, is one called pyoktanin, of which Prof. Dr. J. Stilling, of Strasburg, is the discoverer. The advantages claimed for this analine compound are that, 1, it is devoid of any injurious effect on the human economy or organism; 2, certainly and utterly destructive of all bacteria or other microorganisms absorbing it; and 3, that it is rapidly diffusible in, and permeant of, both healthy and diseased animal tissues or fluids, and perfectly penetrant through the enveloping membranes and internal substance of all bacterial colonies harbored by them.

The respective remedy, which is manufactured by E. Merck & Co., has been given a thorough trial by me in suitable cases for but a comparatively short time, but even with so short a trial, it has impressed me very favorably. The suppuration ceases more rapidly under its influence than under the use of other remedies, and that without producing any noticeable unpleasant effect on the system.

Stitch hole abscesses, two sinuses with thick pyogenic membranes, and purulent endometritis, were the conditions for which it has been put to use, employing a 1 per cent. watery solution, which is five to ten times stronger than recommended. Such strong solutions were used because those as recommended did not seem to me to do any better service, after a few trials, than some of our other antiseptics, which had the advantage of not discoloring everything with which they come in contact, that being the main disagreeable feature in connection with the use of pyoktanin—the discoloration produced being a deep purple, which can only be immediately removed from the hands by washing with soap liniment or javelle water. Clothing, etc., is destroyed by the stains, or the use of the javelle water required for washing them, hence some care must be exercised in its use. This unpleasant feature can, however, not come into consideration, if we remember that the conditions for which I have used

it are of very obstinate character, and withstand our ordinary remedies with a tenacity which sometimes brings us to despair, with pyoktanin applications I have seen them yield almost invariably with ten to twenty daily applications. In the more mild forms, as stitch hole abscesses, three or four days sufficed to bring suppuration to cessation.

In the form of endometritis mentioned, the remedy is injected directly into the uterus with a Braun syringe, and so far, none of the unpleasant effects have been noticed which we are apt to see from iodine, etc. 1, the cervical canal is always patent in such conditions, so that over-distension, if the injection is carefully made, never occurs; and 2, the remedy is non-irritant.

I have briefly stated my own personal experience, thereby hoping to stimulate my colleagues for a further trial. In carcinoma, for which it is also used very extensively, my experience is yet too limited to speak one way or the other.

IRON IN LARGE QUANTITY IN ANÆMIA.—In a very marked case of anæmia in a young girl of 19, H. Taylor, after being assured of the satisfactory condition of the digestive functions, prescribed for her a drink of a diluted solution of the perchloride of iron (v-xxv drops to 30 cc. (3j) of water). He gave her to understand that the more she took day and night, the better it would be for her, and the sooner would she recover. She entered heartily into his plans, and in twenty-seven days took almost 900 grams (3xxx) of tincture of the perchloride of iron (according to the British Pharmacopœia, instead of 100 grams, the maximum dose with most physicians. There were no unpleasant phenomena on the part of the digestive tract. To keep the bowels regular, he gave daily a pill of aloes and nux vomica. The result was complete cure after four weeks of treatment. The author recommends this mode of treatment, which allows the ingestion of large quantities of iron, without in any way interfering with the health of the patient. Should the iron commence to show any unfavorable effects (constipation, etc.), the patient should stop the medication, which no longer agrees with him.—*La Courrier Médicale; La Gazette Médicale de Montréal.*

UNIQUE PROCEDURE IN A CASE OF PHOTOPHOBIA.—A boy of 13 was affected with a panniform keratitis of both sides, with intense photophobia. Each time that the pupils were exposed to bright light, the boy was seized with violent sneezing. A pledget of cotton charged with a few drops of chloroform was introduced into the external auditory meatus and in a few minutes the eye could be opened without the occurrence of sneezing. The author (Gutteriez-Ponce) explains the effects of this local medication by anæsthesia of the Gassenian ganglion which is situated in the neighborhood of the auditing canal. This ganglion might be the center of the reflex action giving rise to the sneezing, consecutive to the impression on the retina by a bright light.—*Journal de Médecine de Paris.*

A BOUNTY of one hundred francs is offered to every married couple in France who shall add one more citizen to the State during 1892. It is hoped in this way to check the decrease in the French population.