The technique of abdominal and pelvic surgery / by J.W. Long.

[Reprinted from the American Gynæcological and Obstetrical Journal for September, 1895.]

THE TECHNIQUE OF ABDOMINAL AND PELVIC SURGERY.*

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By *technique* is meant the essential details for, during, and subsequent to, an operation. It is a well-recognized fact that the essence of modern surgery is *asepsis;* therefore in our technique we should strive to attain as nearly as possible this ideal condition. This may

The operating-room furniture.

be done by a combination of the following methods, each of which is distinct, but all having the same object in view—viz., the removal of dirt and bacteria:

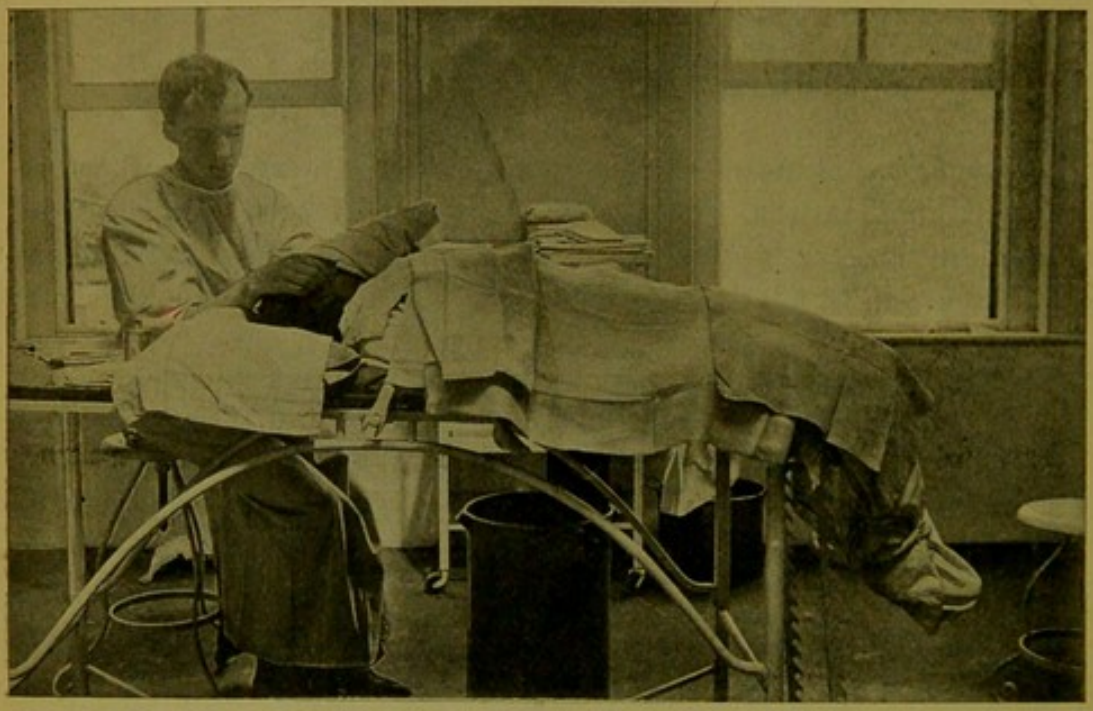
* Read before the North Carolina Medical Society at its forty-second annual meeting, held in Goldsboro, May 14–16, 1895.

1. *Mechanical.*—Scrubbing with hot water, green potash soap, and a stiff nailbrush.

2. *Thermic.*—Boiling, steaming, or dry heat.

3. *Chemical.*—By antiseptic drugs, as bichloride of mercury, permanganate of potash, etc.

There is often confusion just on this point. Some men who claim not to believe in "bugs," as they superciliously call bacteria, are



The patient on operating table. Toilet completed.

scrupulously careful about washing their hands, boiling their instruments, and other like methods, disclaiming all the time their belief in "antiseptics," while the truth is they are employing some of the most valuable antiseptics known. In other words, "antiseptics" is a *generic* term with a specific meaning, embracing many other measures besides the use of *antiseptic drugs*, which in modern surgery really stand at the bottom of the list of antiseptic methods.

But we should not be lured away from first principles, and take it for granted that, because bichloride of mercury and carbolic acid are "reduced to ranks," there is nothing in antiseptics, for I would be false to the teachings of science if I did not affirm and *underscore* the fact that the rapid strides of latter-day surgery are due to antiseptic methods. Without antiseptics we can not have asepsis.

A man is best qualified to speak from his own experience; there-

fore I shall confine my remarks to a description of the technique that I employ in abdominal and pelvic surgery, the most important features of which may be briefly stated as follows :

I. *The Surgeon.*—He should under all circumstances avoid infecting himself, for an infected surgeon means an infected patient. As an illustration of this may be cited the observation of many present who have seen puerperal fever follow in the track of some particular doctor or midwife. For the operation, the surgeon should remove his outer clothing and wear a white duck-suit and white shoes with rubber-soles ; certainly, at least, he ought to wear an apron that will cover his clothing. An operating suit is essential for two reasons : (1) that the patient may not be infected, and (2) that the operator's clothing may not become soiled.

II. *The Room and Furniture.*—The operating room is one of the chief features of a hospital. It is located with a view to good light, and the floor and walls made of material that will stand frequent washing. The furniture also is of an especial kind, usually a combination of glass and metal, so that everything may be scrubbed and rendered aseptic. In private practice this principle may be carried out to a large degree

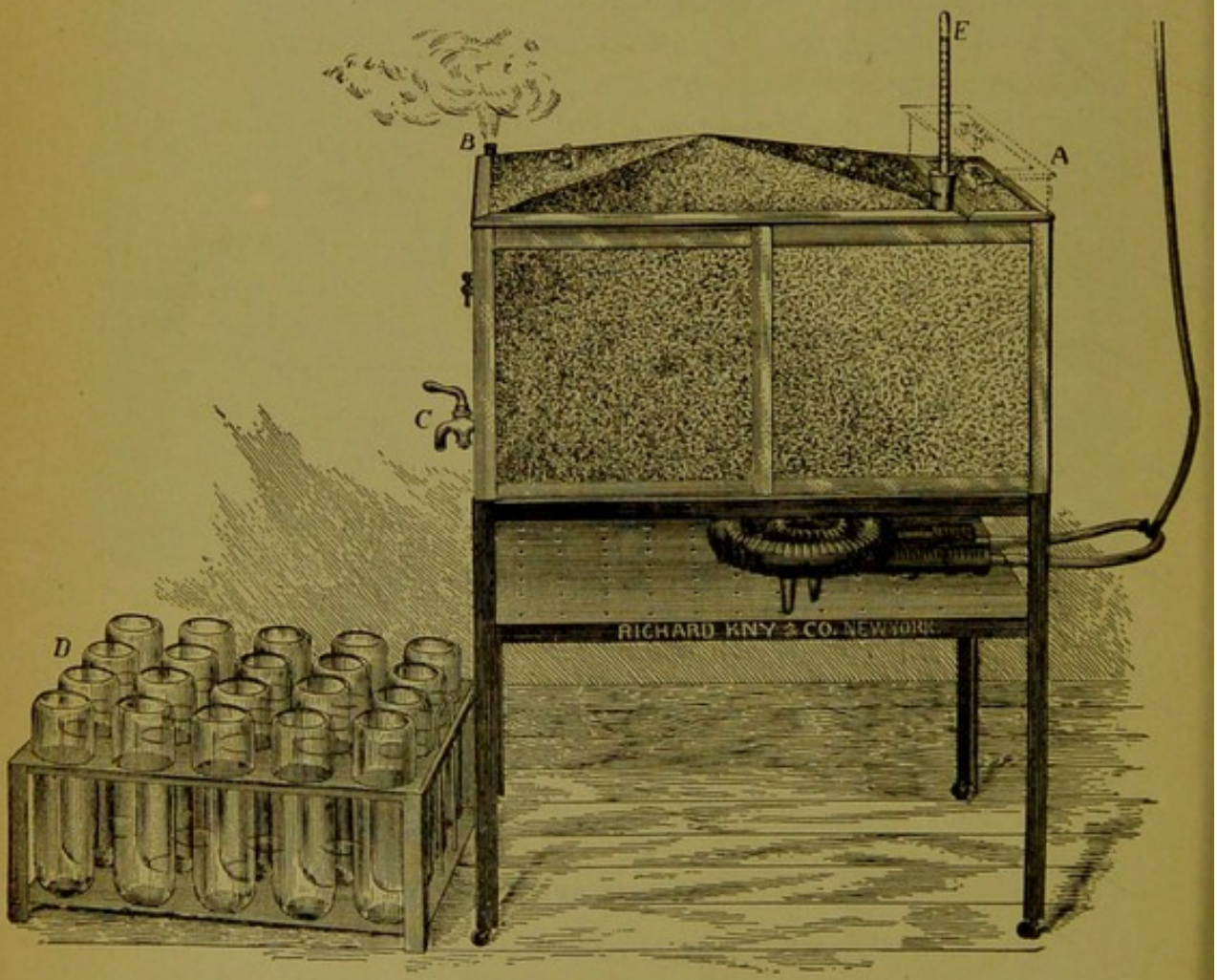
The Trendelenburg posture on Krug's frame.

by selecting the best-lighted room in the house, a plain, stout table covered with a clean blanket and sheet, a smaller table covered by clean towels for instruments, and plenty of basins with water arranged conveniently. Just here I wish to call attention to the value of the Trendelenburg position ; the glass table can be readily changed into this position, while in a private house a Krug frame is easily adjusted

to any stout table. In an emergency I have obtained the same end by turning a chair down on the table.

III. *The Water.*—Whenever it is possible use water that has been boiled. It is well to have cold water that was boiled the day before, and hot water boiled on the day of the operation. While boiling water once does not kill the spores, yet for practical purposes it may be considered sterile.

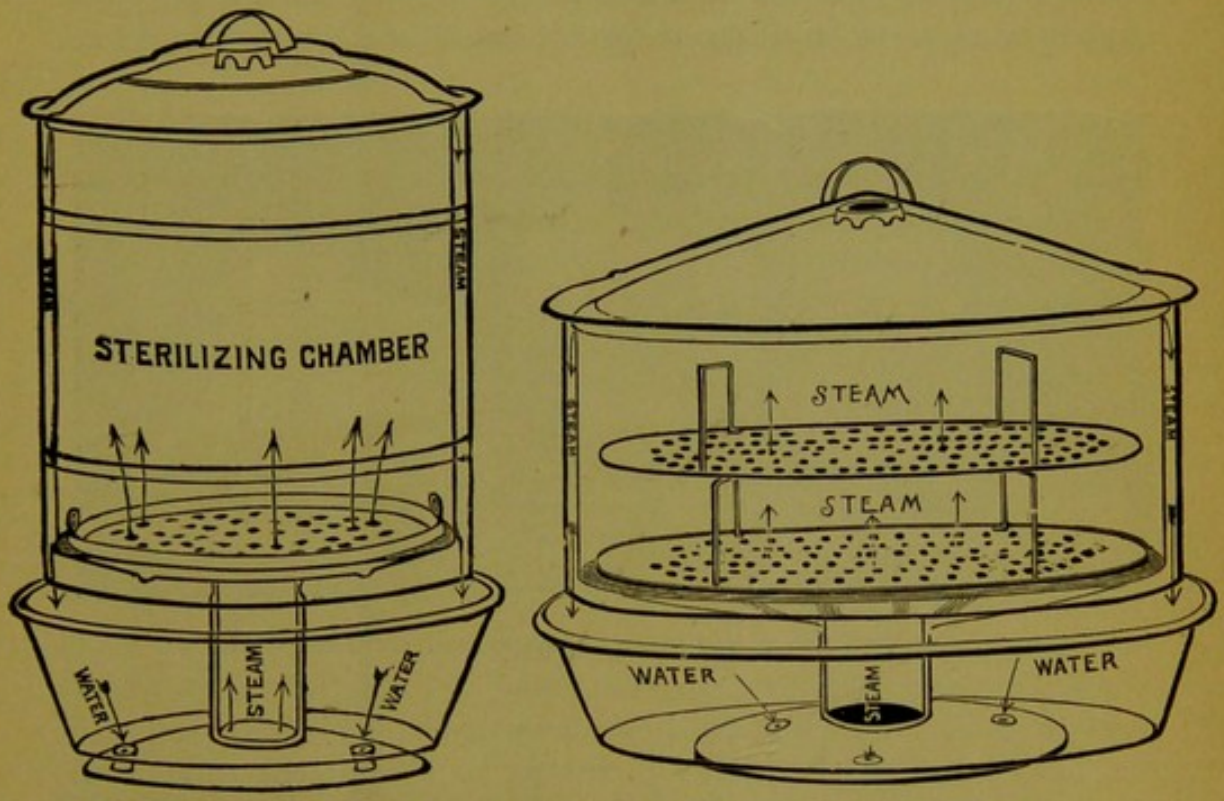
IV. *The Sterilizer.*—In antiseptic surgery the sterilizer is an important item. The best sterilizer is the Arnold, or one acting on that principle. It is simple, cheap, and effective. It consists essentially



The Lawson sterilizer.

of a vessel holding a shallow layer of water above which is the steam chamber containing the articles to be sterilized, and where the steam is recondensed into water. The Lawson sterilizer is used at the Old Dominion Hospital. In private practice I use the Arnold sterilizer with great satisfaction.

V. *Suits, Towels, and Dressings.*—Surgeon's suits, towels, gauze and cotton dressings, and sponges are made into suitable-sized packages and steamed. The dressings and sponges should be sterilized an hour the first day and half an hour the two succeeding days.



The Arnold sterilizer.

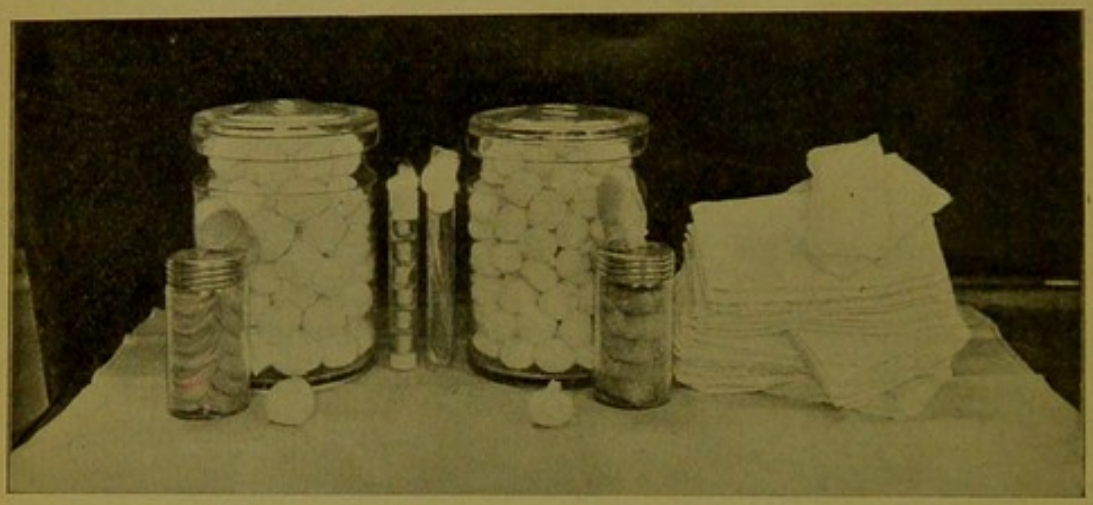
Iodoform gauze is usually much better made by the surgeon or nurse than when purchased ready made. The following is a good formula: With surgically clean hands, make an emulsion composed of ten drachms of iodoform and six ounces of soapsuds made with normal salt solution and Castile soap. Place into a clean glass bowl and thoroughly rub the emulsion into plain absorbent gauze three yards. Cut your iodoform gauze into pieces, fold, place in glass jars, and sterilize by the fractional method. Each time the jar is opened it must be resterilized.

VI. *Sutures.*—Silk, which is usually used for sutures and ligatures, should be cut into proper lengths, and wound on glass spools. These are placed in glass tubes, the ends plugged lightly with cotton, and the whole sterilized by the fractional method. Silkworm gut is cut into lengths, slipped into glass tubes, and steamed like the silk. Silver wire is boiled with the instruments.

VII. *Instruments.*—Instruments, irrigator nozzles, and draining

tubes are effectually sterilized by boiling from one to ten minutes in a one-per-cent. solution of carbonate of soda. During the operation they should be kept submerged in plain sterilized water.

VIII. *Sponges.—a.* Sea sponges. These are prepared by the following method: (1) Beat in a wooden bowl to loosen the grit; (2) wash in warm water until the water remains clear; (3) place in dilute



Jars of sterilized gauze and cotton sponges, and sterilized dressings.

muriatic acid, ℥ ij to Oj; (4) place in permanganate-of-potash solution, five per cent., or ℥ vj to Oj; (5) transfer to a saturated solution of oxalic acid; (6) place in sterilized limewater; (7) place in bichloride-of-mercury solution (1 to 1,000) for twelve hours; (8) rinse twice in sterilized water; (9) preserve in carbolic-acid solution, three per cent., or ℥ iijss to Oj.

b. Cotton sponges, made of absorbent cotton deftly rolled into pledgets.

c. Gauze sponges consist of absorbent cotton wrapped in plain gauze.

d. Abdominal sponges, larger flat pieces of cotton loosely covered with gauze.

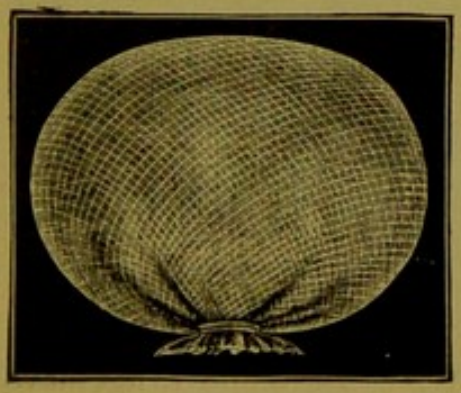
e. Gauze sheets, plain pieces of gauze twelve by twenty-four inches, hemmed.

All of these are sterilized by the fractional method. Sea sponges are hard to prepare, and so unreliable; while the cotton and gauze sponges are easy to make and so very reliable that the latter should be usually preferred.

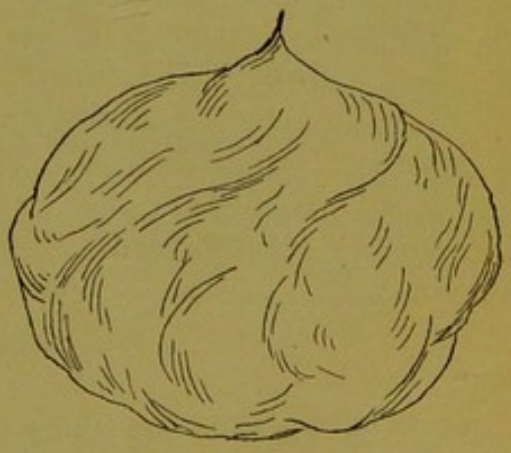
IX. *Hands and Forearms.*—It is conceded that the hands are harder to sterilize than anything else. There are a number of meth-

ods. The one which I prefer is: (1) pare the nails closely; (2) scrub the hands and forearms for ten minutes with hot water, green potash soap, and a stiff nailbrush, changing the water often; (3) soak in a hot saturated solution of permanganate of potash for one minute; (4) rinse off in a hot saturated oxalic-acid solution; (5) neutralize the acid in sterilized limewater. Many surgeons rinse their hands in alcohol.

X. *The Patient.*—A careful examination is made of the heart, lungs, and kidneys. For two days preceding the operation only liquid diet is given. The bowels are thoroughly emptied by laxatives and enemas. The evening before the operation a general bath is given, the abdomen and vulva washed with green soap, and the abdomen stained with a solution of permanganate of potash, which is rinsed off by oxalic-acid solution, followed by plain water. A soap poultice is applied to the abdomen, and the vagina douched with a bichloride solution (1 to 1,000) and packed with gauze wet in the same solution. The next morning the poultice and gauze are removed, a vaginal douche of bichloride solution is given, the abdomen and vulva shaved, the parts washed again with hot water and green soap, a few drops of tincture of iodine placed in the umbilicus, equal parts of ether and alcohol applied, the whole rinsed off with bichloride solu-



Gauze sponge.



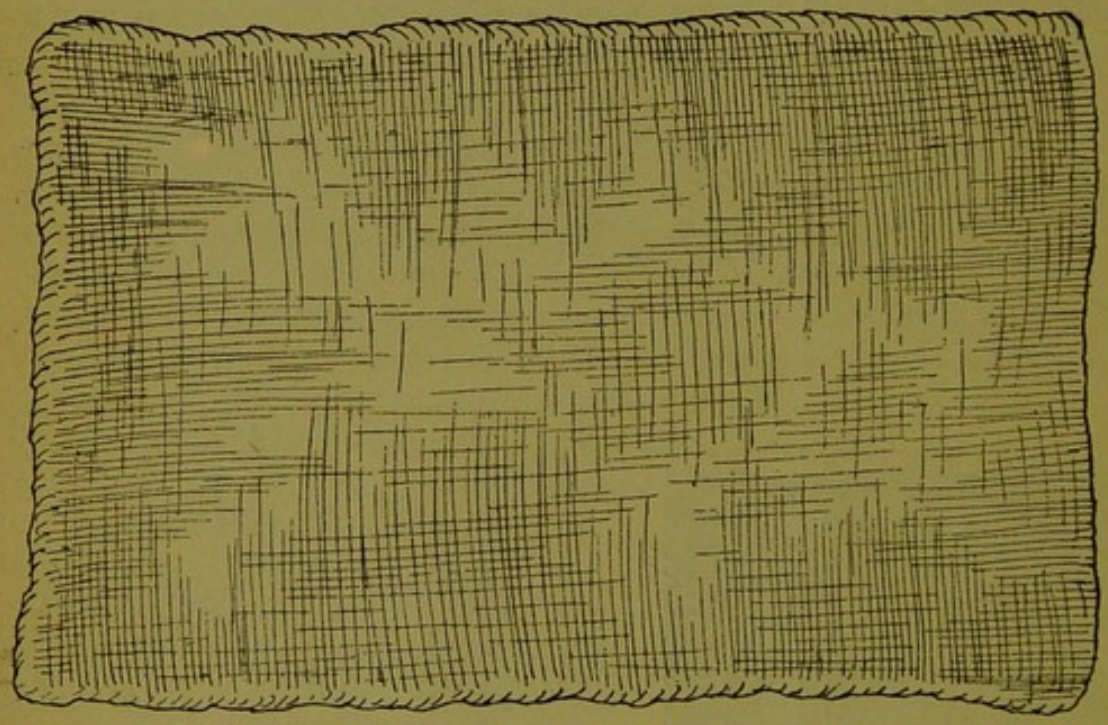
Cotton sponge.

tion, a fresh vaginal pack introduced, and a large pad wet with the solution fastened on with a bandage.

The patient, when taken to the anæsthesia room, is given a hypodermic of morphine, one eighth of a grain, and atropine, one one hundred-and-fiftieth of a grain, and the anæsthetic cautiously administered As soon as narcosis is induced, the carriage is wheeled into the operating-room, the patient lifted upon the operating table, a Kelly pad

placed under the hips and back, the dressings removed, and the parts vigorously scrubbed, this time with a *stiff nailbrush*, hot water, and green soap; the vagina is briskly mopped out with gauze sponges held in the bite of dressing forceps, alcohol and ether again applied to the abdomen, the parts rinsed off with sterilized water, and dried with a sterilized towel. The field of operation is now covered with a large piece of sterilized gauze slit in the middle and surrounded by sterilized towels.

XI. *The Operation.*—In an abdominal case the operator stands to the right of the patient; to his right is the instrument table and to his left a basin of sterilized water; to the patient's left is the first as-



Gauze sheet.

sistant, by his side are the sponges. While antiseptic drugs have been used to a limited extent in the preparations for an operation, absolutely none are used during the operation. Plain sterilized water is used to keep the instruments and sponges in and to dip the surgeon's hand in, while for irrigating the abdominal cavity a normal salt solution of forty-five grains to the pint is employed.

In operations about the vagina plain water is used for constant irrigation. The leading idea throughout all operations is asepsis rather than antiseptics. In pelvic operations a leg holder is indispensable; the simplest and cheapest is the Robb leg holder, which is

a plain cloth strap with snaps on the ends and rings fastened about a foot from each end.

XII. *The Anæsthetic.*—Anæsthesia should always be considered dangerous. Ether is to be preferred unless specially contra-indicated. Great care should be taken to guard against anæsthesia accidents, and while no undue haste should be made, every unnecessary moment the patient is under anæsthesia must be considered lost. Everything, no matter how trivial, that can possibly be done before the anæsthesia is begun, should be attended to, so as to lose no time during the operation. This is a point too often neglected.

XIII. *After-treatment.*—As soon as the operation is over and the dressings applied, the patient should be quickly placed in bed, surrounded by hot-water bags or bottles, and every effort made to guard against shock. All food and drink is withheld until anæsthesia-nausea is over, when teaspoonful doses of hot water may be allowed, followed by barley water, toast water, broths, and chicken soup. Buttermilk may be given, but never sweet milk at first. If the stomach retains food well these may be followed by semi-liquid and later by full diet. As soon as the stomach is quiet, one grain of calomel is given every hour until six or eight doses are taken. This should be followed by drachm doses of sulphate of magnesia and soapsuds enemas. If there is flatulency, a turpentine enema is often effectual. *It is absolutely essential that the bowels should move.* The patient should be encouraged to empty the bladder every six or eight hours, and if unable to do so, the catheter must be used under strict asepsis.

The thing to be dreaded in all operations involving the peritonæum is septic peritonitis; therefore one must guard against and watch for any indications of sepsis.