

position of the head, packing the nasal cavity before the operation with adrenalin-soaked gauze, the type of anesthetic, etc., are not germane to my subject, except that one should consider favorably the rectal anesthesia as administered after the method of Professor Besley and Dr. Churchill. The anatomic work was done in the laboratory for experimental surgery of Northwestern University. I acknowledge the great help of Drs. F. Gurney Stubbs and H. M. Richter in developing the technic.

SUMMARY

The infranasal route is proposed in contradistinction to the supranasal route for reaching the tumors of the pituitary body. The technic in general consists in elevating the nose, cutting the cartilaginous septum, removing the middle turbinates, deflecting the septum, locating the sphenoidal foramina, biting off the intervening attachment of the perpendicular plate of the ethmoid and vomer, entering the sphenoid cells and thus reaching the floor of the sella turcica.

103 State Street.

CYSTOCELE

A RADICAL CURE BY SUTURING LATERAL SULCI OF VAGINA TO WHITE LINE OF PELVIC FASCIA \*

GEORGE R. WHITE, M.D.  
SAVANNAH, GA.

Ahlfelt states that the only problem in plastic gynecology left unsolved by the gynecologist of the past century is that of permanent cure of cystocele.

condition. The reason for failure seems to be that the normal support of the bladder has not been sought for and restored, but instead an irrational removal of part of the anterior vaginal wall has been resorted to, which could result only in disappointment and failure.

The support of the bladder may readily be determined in the cadaver by making a suprapubic incision and attempting to push the bladder out through the vulva. It

JOHN N. SHELL LIBRARY  
NASSAU ACADEMY OF MEDICINE  
1200 STEWART AVENUE  
GARDEN CITY, NEW YORK

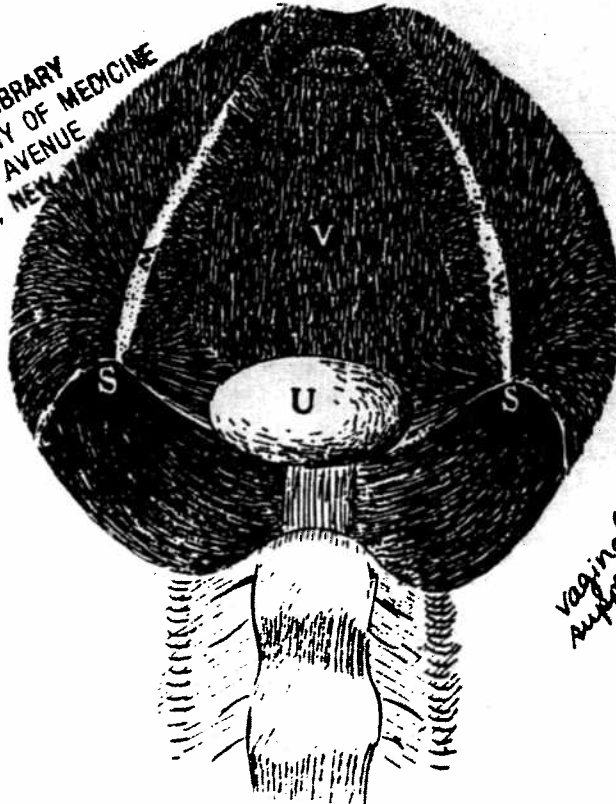


Fig. 1.—Attachments of the vagina seen from above: (u) uterus; (s) spine of ischium; (w) white line; (v) vagina.

That these cases recur after operation is too well known. The late Paul Nunn states that all of his cases ended in failure and he had given up operating for that

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

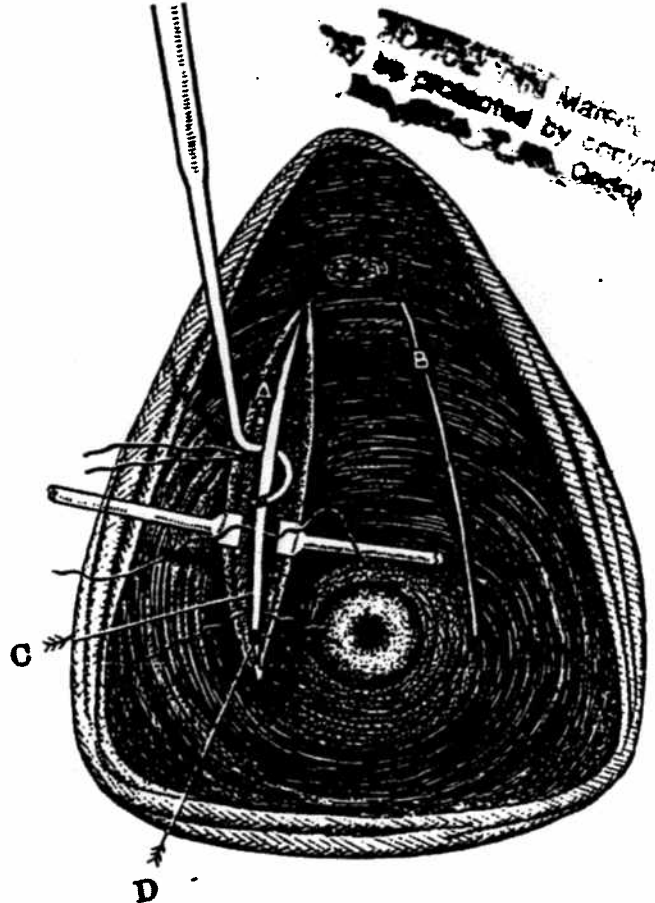


Fig. 2.—Passing of sutures (a) back of the white line by Deschamps' handle-needle; two sutures (b) in place; incision (c) from lateral sulcus of vagina to side of urethra; (c) white line; (d) spine of ischium.

will be found to rest on the anterior vaginal wall to which it is slightly adherent. If the bladder be pushed aside and an attempt made to push the anterior vaginal wall back toward the perineum its support comes out very plainly. It is attached to the symphysis pubis and pubic bones in front, laterally to the white line of the pelvic fascia and ischiatric spine; and, above and behind, to the uterus. The uterus, being freely movable, is no important factor in the case and the real support of the vagina comes from its attachment to the white line of the pelvic fascia and especially a thick bundle of fibers attached to the spine of the ischium and radiating out on both the anterior and posterior surface of the vagina. If the fibers along the white line, and especially those originating from the spine, be cut across, the vagina falls down and can be pushed out of the vulva in the manner of a cystocele. It is, therefore, evident that a cystocele is caused by the breaking loose of the vagina from the white line which can readily occur during labor and especially in an instrumental delivery.

I have recently had an opportunity to observe the actual occurrence of this lesion in a case of instrumental delivery for eclampsia, in which a laceration run-

vaginal support

Waters  
by Gray

ning along the lateral sulcus of the vagina laid bare the spine of the ischium, and separated the vagina from its attachments. Had the patient lived, she would undoubtedly have had a cystocele.

In another case of a young primipara delivered by forceps without any laceration, except a small tear along the lateral sulcus of the vagina, a complete cystocele developed within a month, although the perineum was intact and the uterus was in normal position.

In the treatment of cystocele the object is to reattach the vagina to the white line of the pelvic fascia, especially at its origin from the ischiatic spine, which can be done through the vagina without great difficulty.

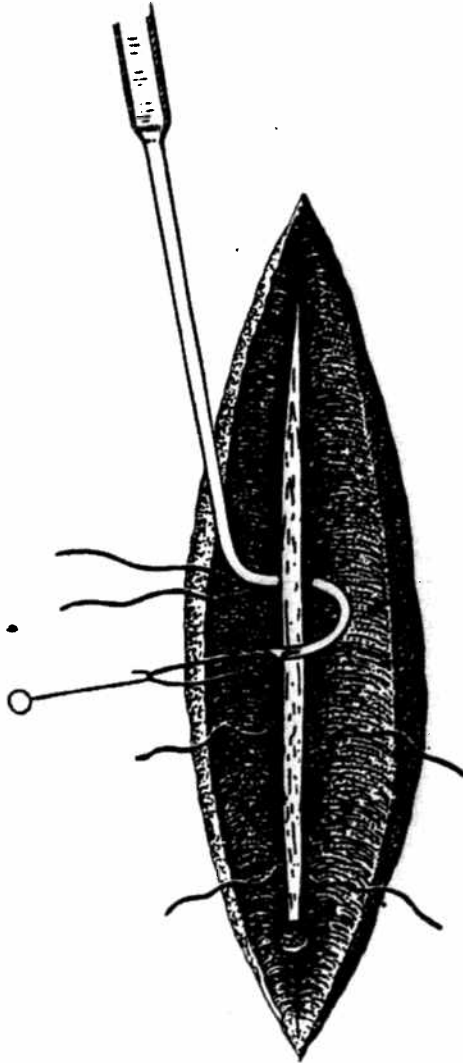


Fig. 3.—Passing suture behind the white line by the Deschamps needle; drawing out a loop of the thread by hook.

The vagina is held open by two retractors, the ischiatic spine located by palpation, and an incision from one to two inches long made through the mucous membrane, parallel to the white line, and extending well up the vagina. The bladder is separated from the vagina by blunt dissection until the spine of the ischium and white line are reached and can be felt uncovered beneath the finger. Hemorrhage is seldom troublesome and can be controlled by a few minutes' pressure. The sutures, which are of chromicized catgut, are passed under guidance of the finger by a Deschamps handle-needle.<sup>1</sup>

1. I make use of a Deschamps needle, described by Charles Peck in his article on cleft palate, *Annals of Surgery*, January, 1906, xliii, 10.

The first suture goes back of the white line just as it joins the spine of the ischium. The handle-needle is taken off, and each end of the suture threaded on a separate needle; one needle is passed from within out through the median edge of the incision, taking a firm hold on the vagina; the other needle is passed in a similar manner through the lateral edge of the incision. The two ends are then clamped and are ready to be tied. A similar suture is placed half an inch lower down on the white line, and when this is in place both sutures are tied, bringing the lateral sulcus of the vagina in contact with the white line of the pelvic fascia.

Should there be any prolapse at the outlet of the vagina, the incision may be extended down alongside of the urethra and the vagina sutured to the dense fascia covering the pelvic bone. The opposite side is treated in a similar manner and when both sides are tied the anterior vaginal wall is drawn up in a normal position, and has no tendency to sag, even when the patient

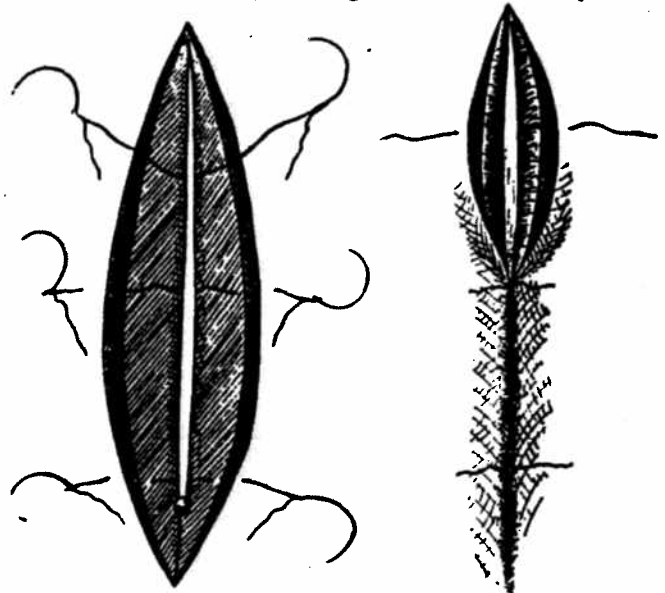


Fig. 4.—Suturing the lateral sulcus of the vagina to the white line.

Fig. 5.—Closing the wound; two sutures tied.

coughs or strains. The vagina reaches across from one ischiatic spine to the other, without any tension; it collapses when the retractors are removed and normal relations of the parts are restored.

The operation is always done in combination with other plastic operations, and does not interfere in any way with them, nor does it minimize the caliber of the vagina, which is a matter of importance should extensive denudations be contemplated for a rectocele.

The immediate effect is satisfactory. There is not much pain; dysuria, if present, passes off in a few days. The patients get up in from ten days to two weeks.

I have performed the operation nineteen times in the past three years, always in connection with some other plastic operation. No recurrence of the cystocele has taken place, so far as I have been able to determine, though some of the patients could not be followed.

The operation presents the following advantages:

1. The normal supports of the bladder and vagina are restored.
2. There is no sacrifice of tissue.
3. Recurrences are rare and are due to faulty technic rather than faulty principles.
4. The operation is done without interfering with any other plastic work about the vagina.

4 Liberty Street, West.

## ABSTRACT OF DISCUSSION

DR. H. GRAD, New York City: At the Woman's Hospital in New York we have passed through a series of stages in plastic surgery. It was in this place that Sims began his plastic surgery, followed by Emmet, Thomas, Peasley and others. We formerly operated there on a plan devised by Emmet of denuding the anterior wall of the vagina in cystocele with the addition of a suture Emmet devised. A denudation is made on either side of the cervix and also in the median line on the anterior wall of the vagina, and when these three denudations are brought together the cervix is pushed into the hollow of the sacrum. That was the first principle of a successful operation on the anterior wall as practiced in the Woman's Hospital. This operation was done for a great many years, but we had a great many recurrences. Within the past few years another method has been followed there, and that is the method of Dr. J. Riddle Goffe. In this operation a longitudinal incision is made from the urethra to the cervix on the anterior wall of the vagina and a transverse incision along the cervix. These two incisions open up the entire anterior wall of the vagina, the bladder is dissected off, which is a very important point, because the bladder wall becomes adherent to the anterior wall of the vagina in a way that is vicious. Dr. White did not mention cystocele where no traumatism has occurred. In the unmarried woman there is no traumatism, but a gradual loss of the support, and the result is cystocele. By dissecting off the bladder as practiced by Dr. Goffe, we find that we get absolutely perfect results. He sutures the base of the bladder to the anterior wall of the uterus with three fine catgut sutures to hold the bladder out of place. The pelvic fascia is brought together in the same manner as one does in operating for a hernia.

It seems to me that the operation described by Dr. White is a very good one because it is based on good principles, but I believe that unless the bladder is at the same time separated from the anterior wall of the vagina there will be some recurrences.

DR. C. W. BARRETT, Chicago: The principles on which cystocele is treated must be based on the fact that cystocele or rectocele, or prolapse of the uterus is a hernia through the pelvic floor, and we must take into consideration the supports of the pelvic organs and the abdominal organs as well. The viscera, including the pelvic organs, are supported by ligaments and then by a limiting wall, and that limiting wall grows in importance as it goes downward. The pelvic floor is in the unfortunate position of having to play fast and loose, of having to be a most important part of the abdominal wall, because it is the lowest, and it must allow the passage of the child's head which distends the soft parts of the pelvic floor to the extreme limits of the bony parts; and these muscles must again contract so as to serve as the most important part of the abdominal wall. When important structures run through the abdominal wall, as we see in the inguinal region, instead of running straight through, they run through one part, then along the wall obliquely and then through the remaining portion of the wall. In the lower animals, the canal being more oblique, we have less tendency to hernia. As the intra-abdominal pressure increases, the pressure of the internal layer is against the external layer. In animals that walk on all-fours, very little of the pressure comes on the perineal region. In the higher class of animals and in man the muscles which have no use as tail muscles form in the median line the levator ani muscle. Occasionally in an individual we see, without trauma of the pelvic floor, that the muscle presents almost no fibers meeting in the median line, so that no support is derived therefrom and a tendency to hernia is created by reason of atavism of the muscle. We find that the patient needs a perineorrhaphy just as badly as the patient who has had a traumatism of the pelvic floor. To cure cystocele and rectocele we must do several things: 1. Create a good strong pelvic floor, that does not depend on any skin operation nor on a mucous membrane operation. It is herniotomy; going in and getting hold of the levator muscle which has been formed in the upright animals, but which has been displaced by traumatism or which has never met in the median line. 2. We must put the vagina out

of a perpendicular line so that the anterior segment rests on the posterior. 3. If the vagina is so loose that no matter how good a pelvic floor we make, it would gradually work out over the perineum, we must do something with the vaginal canal; and it may be that this method is a good one. I have had no reason to discard the method of taking out an elliptical piece in the anterior wall: not a scarification, but a deep dissection of the anterior wall and bringing it together. 4. We must not only do these two things, but we must put the uterus out of line with the vagina. If we leave the uterus in line with the vagina it will dissect its way down through the vagina again.

DR. I. S. STONE, Washington, D. C.: I agree with Dr. Barrett that there are two very strong "floors," or a division of one floor into two. It is very easy to understand this if we make a dissection from below or above, that the upper plane of this floor, as well as the lower, has strong bundles of fascia which may be demonstrated. If any one will make this dissection they will never fail to utilize it in an operation for cystocele. I can not understand how anyone, after these several years of advanced pelvic work, can continue to use a method denudation. Suppose we have only this upper "floor," as Dr. Barrett has said. If the uterus be left in such a position with the small end forward it will eventually prolapse. But if the uterus be so placed that the fundus is forward and the cervix backward, and in addition to the cystocele operation a proper perineal operation be performed, the patient is cured.

DR. A. GOLDSPOHN, Chicago: About seven years ago I published an article, with illustrations of the technic, entitled, "Intrapelvic and Infravaginal Perineorrhaphy. Without Loss of Tissue." I am glad that correct anatomic principles are finally gaining ground, with the profession, in regard to this operation; because until recently, this operation was in most hands a very superficial and incomplete performance, merely a cosmetic affair, which really improved the condition of the woman very little. As I pointed out in my first article on the subject, a German first called attention to the correct anatomy of the levator ani muscle, and its important function in this regard. I have wondered for years why it was that his countrymen did not incorporate his correct anatomic principles in their surgical attempts at perineorrhaphy. I was recently informed by one of them, that it was because they did not have buried suture material. But we have had absorbable sutures for a number of years and have been rather slow in this country in grasping the proper scope of this operation, and in bringing an efficient technic into general use. Recently Dr. Barrett has become active in this matter, and he practically advocates the same principles, that I have contended for all these years. The play of normal forces in a woman's pelvis, is such, that when she strains, that is when intra-abdominal pressure is exercised, the pressure strikes the vaginal tube, sideways from above, the body of the uterus being during the same time, driven forward, in intensified anteversion. The anterior vaginal wall is driven against the posterior vaginal wall, which in turn is or should be driven against the pelvic diaphragm, the levator ani below. In that manner the vaginal tube is closed against the descent of anything through its lumen by evagination. The bridge of the levator ani muscle which normally passes from one side to the other, back of the vagina and in front of the rectum, is best restored when it has been injured, by temporarily raising the posterior vaginal wall, and then uniting the important structures by purely transverse buried sutures, and then adjusting the detached vaginal wall in folds on the new bridge.

Uterine prolapse in this country being almost altogether in women past childbearing years, or in those who are willing to surrender that function, can be treated very successfully as a rule, by combining a vaginofixation or a ventrofixation of the uterine body or fundus, (by a fibrofibrous union), with a thorough restoration of the anatomy of the levator ani muscle as a pelvic floor or diaphragm. Moderate cystoceles require no other treatment than the building up of such a normal support for them from below. When they are very marked or large, however, it is usually necessary to attack

the anterior vaginal wall, also to give the bladder a new location higher up or on the fundus uteri, where it can not again invite the disorder, and to abbreviate the expanded anterior vaginal wall. The latter is better done not by resection, but partly at least, by sliding a flap of one side under that of the other side, after appropriate detachment, and denudation, thus doubling this wall, over the median area, where it was formerly most attenuated.

DR. G. R. WHITE, Savannah, Ga.: I have been surprised many times in working out this subject to follow the logic of many of the operations recommended for the cure of cystocele. Everything as recommended except repair of the anatomic supports of the bladder. The problem of keeping the bladder in place is solved in repairing the shelf on which it rests. Otherwise I do not see how we can expect to cure cystocele. The point of great importance is that the pelvic organs are a unit. It will not do to repair one part and let the others go and expect to get a cure. There is no use in repairing a cystocele and leaving a relaxed perineum and prolapsed uterus.

### THE MACROSCOPIC AND MICROSCOPIC APPEARANCES OF STOMACH CONTENTS

J. W. WEINSTEIN, M. D.

Attending Physician to the Gastro-Enterologic Department of the Vanderbilt Clinic and the Medical Department of the Sydenham Hospital Dispensary  
NEW YORK

The subject of the macroscopic and microscopic appearances of stomach contents, especially the former, is one that has been neglected by gastrologists. The moment the examiner secures the contents he pours them immediately into the filter on the funnel for the chemical examination. I have to meet yet the man who carefully examines the stomach contents in gross and then makes notes of the macroscopic findings. Even the best text-books on the diseases of the stomach are almost silent on the subject. I myself can judge much better about the anatomic condition of the stomach from looking at the stomach contents than from the results of the chemical examination. I will illustrate by an example.

Here is a specimen of stomach contents that shows on chemical examination the following: Free hydrochloric acid, 30; total acidity, 60; lactic acid, 0; starch digestion, erythro-dextrin; pepsin and rennet ferments normal; biuret positive. What would be the inference? Cannot tell, as everything seems normal. One glance, however, at the stomach contents will establish the diagnosis of the case. The contents present the following characteristics: It spouted out with great force, like a fountain of the stomach-tube. There is a large quantity of it. It is very watery. Very little bread in it. Small round granules (starch) are falling to the bottom. Anything like this makes the case clear at once. It is a case of hyperacidity.

Here is another example: Stomach contents on examination show free acidity of 37; total acidity, 73; lactic acid, 0; starch, amylo-dextrin; pepsin and rennin, normal; biuret, positive. What is the inference? Nothing distinctive. The case, however, is clearly one of chronic gastritis of the acid variety. And on gross examination the contents show it at once. There is a lot of mucus in the contents embedded within the food. Contents are rather profuse and fairly fluid, and I would, therefore, surmise this to be a case of acid gastritis.

The negative part of the examination is just as important as the positive. A patient presents himself and tells of his illness, which has come on him rather suddenly. He has previously been in perfect health. For past few weeks he has had a variety of dyspeptic symptoms, with

some loss of flesh and strength, loss of appetite, etc. The diagnosis of cancer of the stomach naturally flashes through the physician's mind, and he gives the patient a test breakfast. The chemical examination of the contents gives a normal result. Would any one, in the face of that history, assert that there is no cancer? I hardly think so. If, however, the stomach contents are examined macroscopically and found to consist of a clear, thin, milky emulsion, this being supplemented by a negative microscopic examination (and I will point out later what is understood by a negative microscopic picture), I would not hesitate a moment in pronouncing this case to be free from cancer of the stomach. I shall proceed now to point out the characteristic features of the macroscopic and microscopic pictures of stomach contents in normal state and in disease.

#### NORMAL STOMACH CONTENTS

In order to establish fixed clinical pictures we must have a standard. The stomach contents must be extracted always after a certain time and after a fixed uniform meal. It will never do to compare the appearances at one time of a carbohydrate meal and next time of a meat meal, as the two meals will vary considerably in their appearance. Nor does the same meal look alike at different periods of digestion. Fortunately the Ewald test breakfast is marvelously well adapted to the purpose. Although I am in a habit of giving each stomach patient two meat meals as well as two Ewald test breakfasts, and I have, therefore, had the opportunity of examining as many meat meals as I have examined test breakfasts, I have not learned to judge of stomach contents consisting of a meat meal with the same certainty as of an Ewald test breakfast.

A normal test breakfast, when extracted three-quarters to one hour after it is eaten gives a uniform white milky emulsion. The particles of bread are very tiny and they are all of almost uniform size. The contents are neither too thick nor too fluid. One or two ounces are secured without difficulty either by expression method or by employing an aspirator. There is hardly any odor to it. On standing it will separate into two layers which will be almost even in volume, the bread being at the bottom and a rather turbid liquid at the top. There is no mucus to be seen in it in gross. Its color is white, but may shade off into a very faint yellowish tinge. Having made these observations I proceed next to pour the contents into the filter. I notice that the contents pour uniformly. There is no large aggregate of masses bound together. There is not much of adherence between the individual particles of bread; a very slight, almost inappreciable quantity of mucus. The contents filter with a fair rate of rapidity and in five to ten minutes we get 5 to 10 c.c. of contents filtered through.

*Microscopic Examination.*—A drop of the unfiltered stomach contents is put on a large glass slide and spread out evenly to a very thin layer with a glass rod. The unstained specimen is very unsatisfactory for microscopic examinations and the keenest observer will confound small starch granules, fat globules, yeast cells, cell nuclei and blood cells if they should happen to be there. (Blood cells are extremely uncommon in stomach contents, as they are digested by the gastric juice and lose their identity.) I have, therefore, discarded the unstained smears entirely.

The most satisfactory way of examining it is to use a solution of iodine and potassium iodide in the following proportions: potassium iodide, 0.1; resublimed iodine,