

**Chronic intestinal stasis surgically considered / by William Seaman Bainbridge.**

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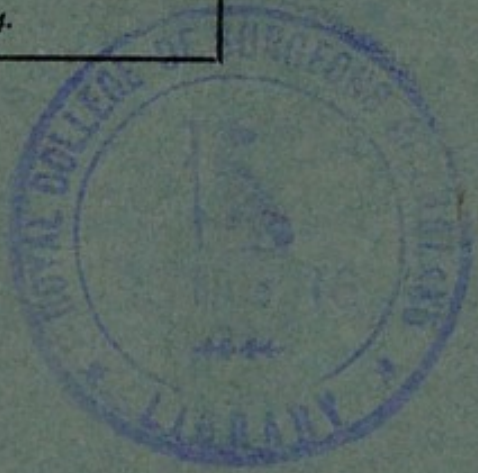
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CHRONIC INTESTINAL STASIS  
SURGICALLY CONSIDERED.

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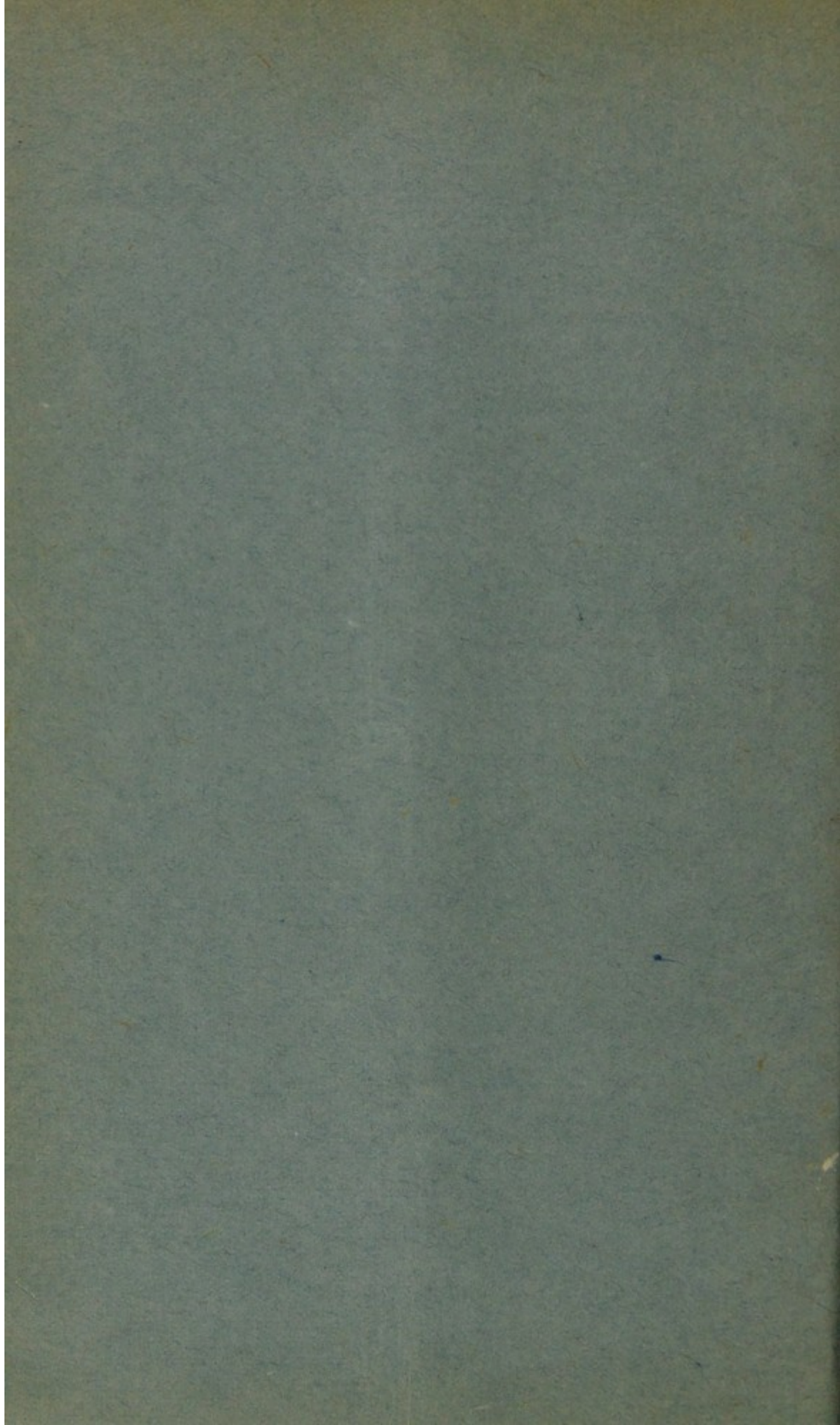
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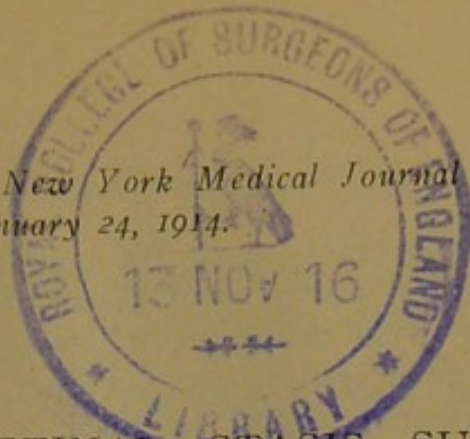
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## CHRONIC INTESTINAL STASIS SURGI- CALLY CONSIDERED.\*

*Some Types Illustrated.*

BY WILLIAM SEAMAN BAINBRIDGE, A. M., Sc. D.,  
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In a recent address before the French Surgical Congress, Sir Arbuthnot Lane, of London, defined chronic intestinal stasis as follows: "By chronic intestinal stasis I mean that the passage of food along the alimentary canal takes place with such slowness that there is formed an excess of toxic matter, especially in the small intestine. Consequently, the blood flow pours into the transforming and excretory organs a quantity of poison larger than they can eliminate. From this it results that all the tissues of the body, drenched in this blood rich in poisons, degenerate and offer a diminished resistance to infection. A defective drainage has consequences which are deleterious to the organism in general as well as to the individual tissues of which it is composed."

Accepting this definition as Sir Arbuthnot Lane has given it, we have practically a question of body drainage to consider. The body, in its last analysis, may be compared to a hollow cylinder, with an inner tube which is twisted, normally, in its development, some parts being dilated, others contracted, while some side passages are enlarged into great organs, which, by developing as diverticula, are still patulous and empty into the one central tube. In other words, this great central canal, the gastro-

\*Presented, with lantern slide illustrations and cases, before the annual meeting of the Medical Association of the Greater City of New York, December 15, 1913.



intestinal tract, with its side passages leading to reservoirs which we call organs, may be compared with a great drainage or sewage system. Obstruction and retention in one part of the sewage system means, sooner or later, contamination of the entire area drained by those canals. So with the body, when there is abnormal retention in one part the entire system, sooner or later, becomes contaminated. For, in the body, there are present just the conditions—warmth, moisture, and bacteria—which favor the development of toxic materials. If for any reason, therefore, there is a slowing of the passage of the contents of the great body sewage system, there is not only a greater development of toxic matter than in normal circumstances, but the absorption of more poisonous material, and the bathing of the tissues with it. The parts thus affected suffer, in time. Disturbed function, disease, and even death, may result.

Just as the sewage system of a great city is kept in proper working order by inspection and care in order to prevent obstruction or breaks, so the body drainage system should be subjected to surveillance, and the far reaching results of retention and tissue contamination prevented.

The prevention, therefore, of chronic intestinal stasis and its aftermath of disturbed function, disease, and death, is our prime object in the study of this subject. The vast majority of cases should have been prevented. Hygienic and medical treatment will cure a large proportion of cases if instituted in the beginning. Certainly nine out of ten and possibly nineteen out of twenty of all cases should not reach the stage which calls for surgical intervention.

Unfortunately, however, in many instances, there comes a time when the plumbing must receive direct attention along its course, when the surgeon, like the expert plumber, must be called into requisition. Whether he shall patch and mend, so to speak, the defective drainage system, thus warding off trouble, or whether he shall employ more radical



measures and eliminate defective parts, is a fine point to be decided in each instance according to the exigencies of the case.

We therefore hear of the conservative and the radical treatment of chronic intestinal stasis. A clear understanding of these terms is important. It is equally necessary to bear in mind that there is no hard and fast distinction between the two terms; that what in one case may seem radical treatment may in another be extremely conservative. The one who, by waiting, content with palliative measures, fears to employ surgery, often by this delay renders necessary a severe surgical operation, and is less conservative than the one who, by resorting to milder surgical measures at first, renders unnecessary the more severe operations. Thus, the surgeon who urges immediate and radical surgical interference may be in reality, and in the light of the ultimate, the conservative one. A simple appendectomy, on the other hand, with division and suture of an early ileopelvic band, or the anchoring of a mobile cecum, with proper aftercare, may obviate many secondary changes, with their far reaching effects, eventuating, perhaps, in hopeless invalidism for the patient, or in the performance of a short circuit or a colectomy. A bankrupt body, with every organ mortgaged to the full by toxic absorption, is a poor surgical risk to be sure; yet many a physical derelict has become such in consequence of drifting, with medical interference and surgical help delayed until it is too late.

In many cases the drainage system has been neglected until a part of the human plumbing must be removed—that is colectomy; in others it is possible to sidetrack the damaged part—that is short circuiting. In still others the parts can be patched up, the tubes can be straightened, the angles can be corrected. It is often difficult to determine to which type an individual case belongs. In fact, it must be freely admitted that we are today feeling our way along, so to speak, endeavoring to profit by experience in order more accurately to place the



borderline cases. Many patients will be operated on with the less severe procedures, and will be cured, while some will eventually return for the more radical intervention. In the second class of cases we shall regret that the latter procedure was not adopted in the beginning. By careful preliminary study of each case, and by thorough investigation of the actual conditions as seen upon the operating table, these mistakes will doubtless be obviated more and more in future.

For over seven years I have been in personal touch with Sir Arbuthnot Lane, studying many of his cases with him before, during, and after operation, supplementing this observation by actual experience in a large number of cases. Today I do not hesitate to short circuit or colectomize where I feel that less radical measures will not suffice, for, as Lane has shown, to cut bands and to disturb many adhesions may give, in markedly toxic cases, as great a mortality, if not a greater one, than short circuiting.

In a broad way we may classify cases of chronic intestinal stasis under three groups. The first may be called the medical group, in which surgery is not necessary, and in which, by means of hygienic measures, posture, diet, special exercises, liquid paraffin, a properly fitted belt, etc., the patient may be prevented from drifting to the surgeon. In the third group of cases either a short circuit or a colectomy is necessary. The first are the early cases, the third the late or extreme cases. Between these two comes a mid group, in which it is possible to repair the drainage system, to patch it up, so to speak, and to effect a cure. The cases which we shall present belong to the second group.

It requires much time and experience to determine the relative size of the second and third groups, and to know definitely to which an individual patient rightly belongs. It is debatable whether some of the patients whose cases are at present under discussion would not have fared better if



they had been short circuited or colectomized; time alone will tell. At all events we have here a group of patients who were suffering from chronic intestinal stasis, with all the symptoms attributable to such a condition, who have been literally made over by surgical intervention, based upon the mechanical causes of intestinal obstruction as described by Lane.

It is not my purpose on this occasion to discuss in detail the mechanical causes and consequences of the slowing of the onflow of the intestinal contents, except as they may be mentioned in connection with the cases presented. Doctor Hayes has clearly given the medical side of the question, and Doctor Quimby has shown the radiographic side. I shall now present, in very brief detail, the histories of a few cases selected from our more recent ones, which have been worked out with Doctor Hayes and Doctor Quimby.

In the diagnosis of the conditions we have used the usual clinical methods, which are excellent; but these have been supplemented by radiographic examinations and careful interpretation of the plates. It must be understood that the radiographic examination includes the fluoroscopic study of the case, from which much is often revealed which is not seen in the skiagraph. The radiographic history includes both the x ray and fluoroscopic findings. The captions of the skiagraphic illustrations include only the x ray findings. Sometimes the radiographic findings are exactly similar to what is found clinically.

After all, however, the surgeon must substantiate, on the operating table, the predictions which he makes from the clinical observation and radiographic examination. In order to do this, and to put into indisputable and permanent form the actual conditions found upon laparotomy, it has been my practice for some time to have a skilled artist stand by the operating table to study the conditions, step by step, as they are revealed, and to depict on



paper exactly what is seen, taking ample descriptive notes. In addition to this, I often have present a stenographer to whom I dictate a description of the conditions found and the surgical procedure employed. The exact state of affairs is demonstrated to any visiting physicians present, and what they see in the abdominal cavity is tallied up, so to speak, with the artist's portrayal of his own impressions and the stenographic report. The pictures which I shall present to you are made in this way, except in Case 1. These three were made from stenographic notes taken at the time of operation, and carefully criticised by several surgeons who were present.

CASE I.<sup>1</sup>—C. C. Referred to me by Dr. William Van Valzah Hayes. Male, aged forty-nine years. Widower. *Previous history.* Three years ago attacks of nausea and vomiting, lasting two weeks. Since that time had been gradually failing in general health. Two years ago had an attack similar to the first. In December, 1912, another attack, since which time he had vomited daily, had lost considerable flesh and strength, had suffered from constipation and general abdominal tenderness, more marked in right lower quadrant; pain in epigastrium four or five hours after eating; large amount of gas. No previous operation. When I first saw patient, about the middle of January, 1913, his general condition was very poor; he was practically starving to death. *Clinical diagnosis.* Almost complete pyloric stenosis, gastric dilatation, duodenal ulcer, ileal stasis. *Radiographic diagnosis,* by Dr. A. Judson Quimby: "Incomplete pyloric obstruction, organic involvement of the first portion of the duodenum, probably malignant; ileal stasis."

*Operation,* December 25, 1913. New York Polyclinic Hospital. *Conditions found:* (Fig. 3.) Dilatation of stomach; almost complete pyloric obstruction; diverticulum of duodenum, with a mass of inflammation about it; marked duodenojejunal kink; adhesions between neck of gallbladder and duodenum; pronounced ileal stasis; marked Lane's bands; some enlarged glands about the pylorus and back of liver.

*Treatment.* 1. Posterior gastroenterostomy. 2. Ileal band cut transversely and sutured longitudinally. Appendix normal, but removed. 3. Small fibroid of right lobe of liver at free margin excised, liver sutured. *Aftertreatment.* Liquid paraffin and supporting abdominal belt.

<sup>1</sup>Presented at the meeting.



*Status præsens:* December 15, 1913, seemingly perfectly well; had gained about 45 pounds in weight; living a normal life.

CASE II.—R. C. Referred by Dr. William Van Valzah Hayes. Physician, aged forty years, married. *Previous history.* Ill defined stomach trouble for some years, with loss of flesh and strength; eighteen pounds lost in four

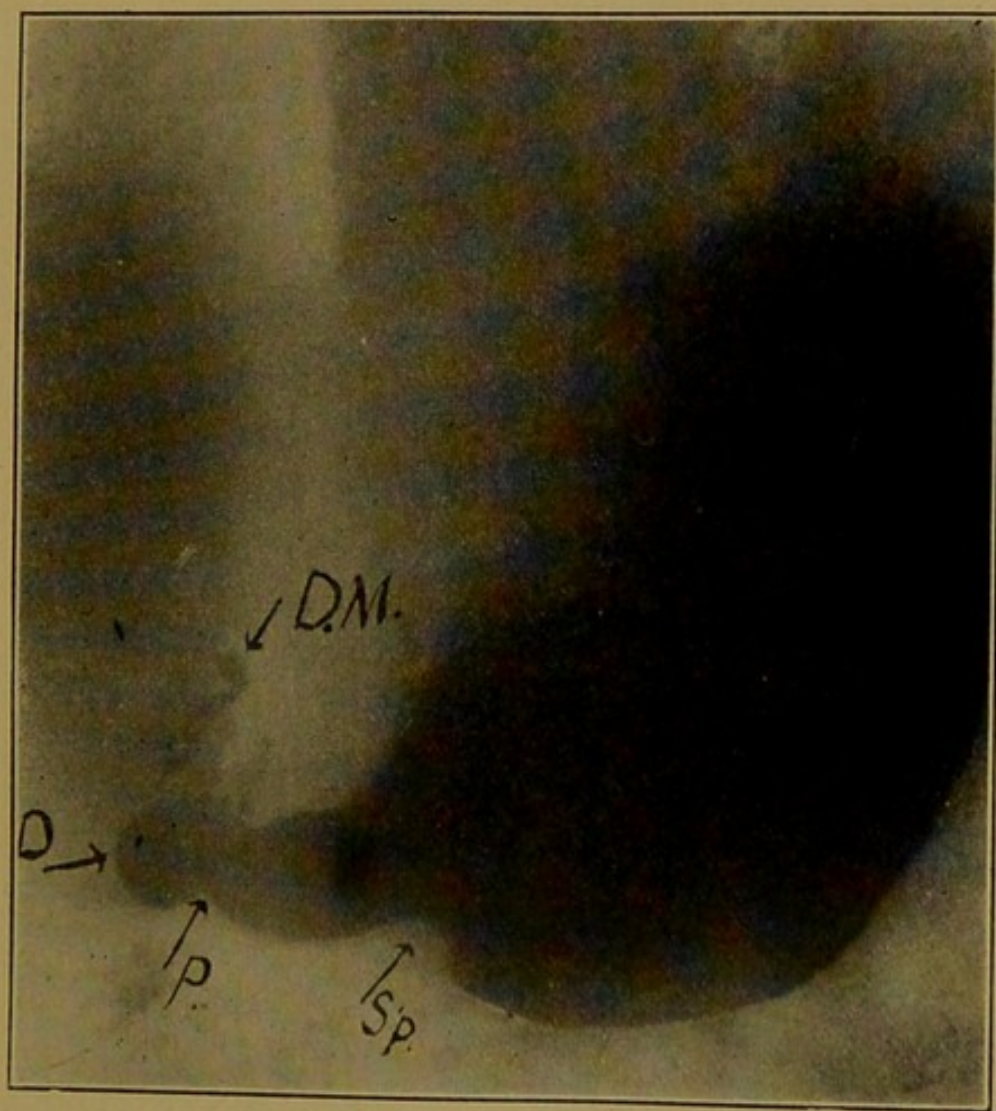


FIG. 1, Case I.—Stomach and first portion of the duodenum. *Sp*, gastric spasm; *D*, first portion of the duodenum; *Dm*, diverticulum; *P*, pylorus. Picture taken within half an hour of administration of bismuth.

years; intermittent heart action; cold hands and feet; sallow skin; often marked general abdominal soreness; constipation; considerable mental depression; unable to practise his profession. No previous operation. *Clinical diagnosis.* Chronic intestinal stasis. *Radiographic examination* by Doctor Quimby: "Small ulcer near the pylorus. Adherent constricting band on the ascending colon. Ptosis



more pronounced on the transverse colon, causing angulation. Dilated terminal ileum and colon."

*Operation*, February 26, 1913, New York Polyclinic Hospital. *Conditions found*: (Figs. 8 and 9.) From right to left the great omentum was twisted and adherent below to an appendix epiploica at the convexity of the sigmoid

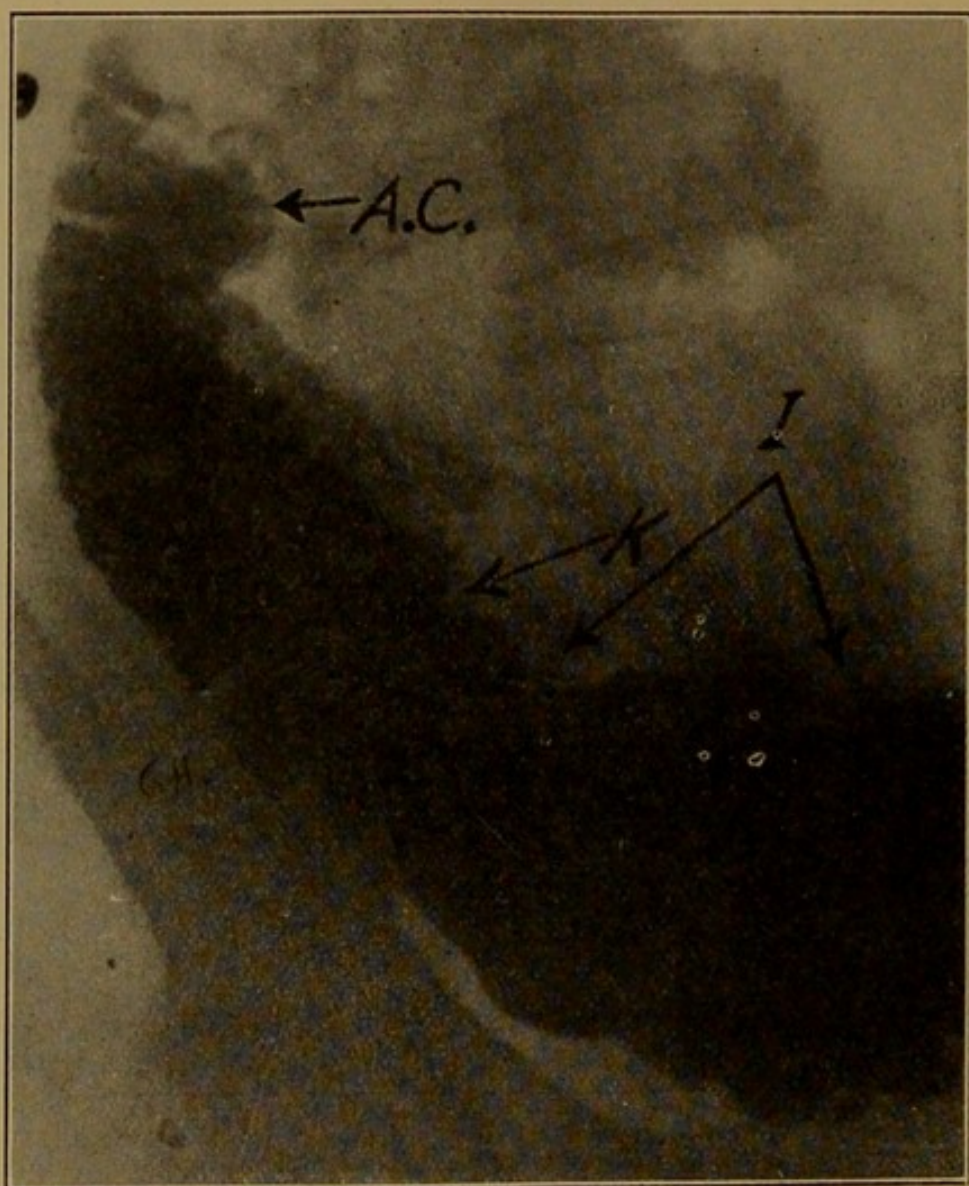


FIG. 2, Case I.—Six hour delay in the ileum. K, kink; I, ileum; A.C., ascending colon.

in the centre. The counterpull on the twisted omentum was the attachment of the great omentum to the hepatic flexure and to a band between the ascending colon and the transverse colon, these parts making an acute angle at the hepatic flexure. This band was broken up in the angle and the raw surfaces turned in. There were found two



distinct bands causing angulation at the duodenojejunal junction. When these bands were cut and the angulation corrected there was a visible diminution, clear to all present, of the collapsed condition of the jejunum.

*Treatment.* 1. Duodenojejunal bands severed. 2. The

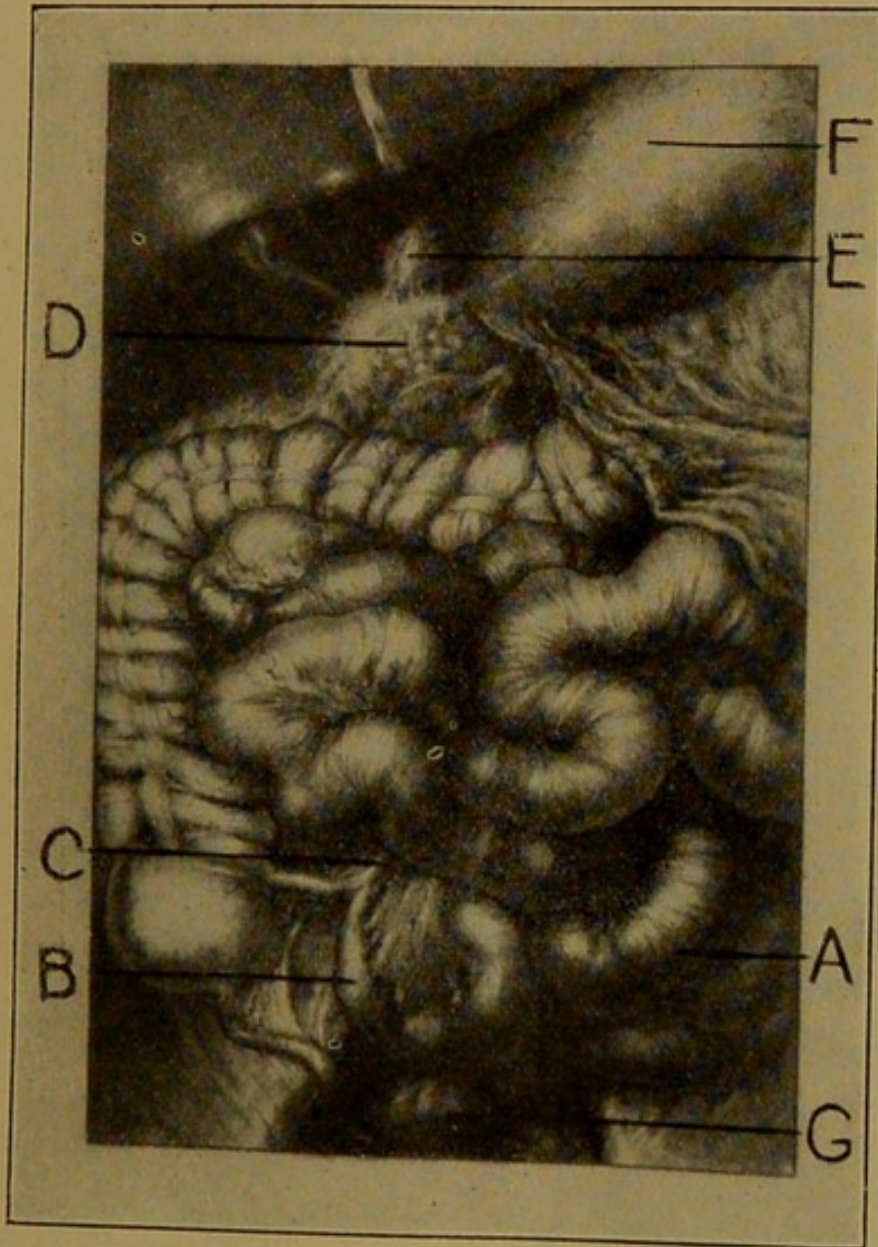


FIG. 3. Case I.—Shows patient in practically vertical position. A, dilated ileum; B, terminal coil of ileum; C, Lane's kink; D, inflammatory mass around first portion of duodenum; E, diverticulum of duodenum; F, dilated stomach; G, pelvic colon.

loop of jejunum fastened to under surface of transverse mesocolon, with a gentle curve, in just the position as for gastrojejunostomy. 3. Adherent omentum detached and raw surfaces turned in. 4. Appendix, which was long, wound around caput coli to the extent of four inches, and



adherent to a typical Lane's band, becoming apparent as cecum was raised; was removed. 5. Lane's band, two inches from ileocecal valve, constricting ileum, severed transversely and sewed up longitudinally. 6. Mobile cecum fastened into right iliac fossa. *Aftertreatment.* Liquid paraffin and supporting abdominal belt.

*Status præsens.* December 15, 1913, very well; gained fifteen pounds in weight. Heart stronger and more regular. Beginning practice in distant city. Letter received stated regret at absence from meeting and reported feeling quite well.

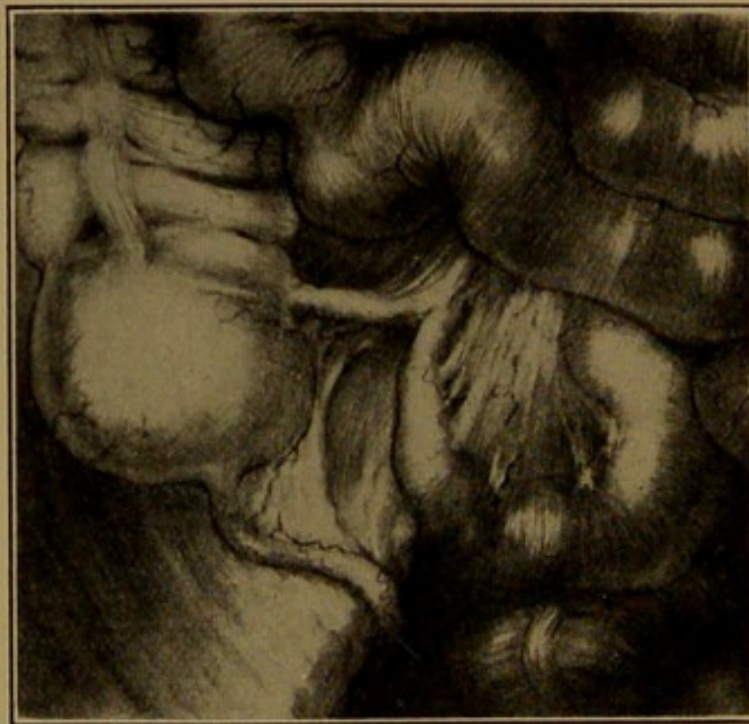


FIG. 4, Case I.—Lower part of Fig. 3, enlarged, showing more detail.

CASE III.<sup>2</sup> A. C. Female, aged fifty-two years, married, children. *Previous history.* Eleven years of constipation, pain in stomach, severe headaches, and sour regurgitation after eating. No relief with best medical care. Absolutely an invalid the past three years, spending the past five months in bed. Constant nausea; frequent vomiting. Sallow complexion; headaches; great mental depression; abdominal soreness. Had undergone nine operations. Three of these were laparotomies; right nephrorrhaphy; ventral suspension; appendectomy, with removal of adhesions.

*Clinical diagnosis.* Chronic intestinal stasis, with ab-

<sup>2</sup>Presented at meeting.



dominal adhesions. *Radiographic examination*, Doctor Quimby: "Pyloric adhesions, probably involving the first portion of the duodenum. Adhesions of the terminal ileum. Redundant sigmoid. The sigmoid's position suggests that it is involved in adhesions in the right iliac fossa."

*Operation*, March 6, 1913, New York Polyclinic Hospital. *Conditions found*: (Figs. 11<sup>3</sup> and 12.) The great omentum was tightly adherent throughout the entire extent of the old central abdominal wound, pulling the incision downward. Adhesions between gallbladder and right side of great omentum, a broad band of about two inches, corresponding exactly to the length of the old wound from previous operation, on gallbladder. This band was strong

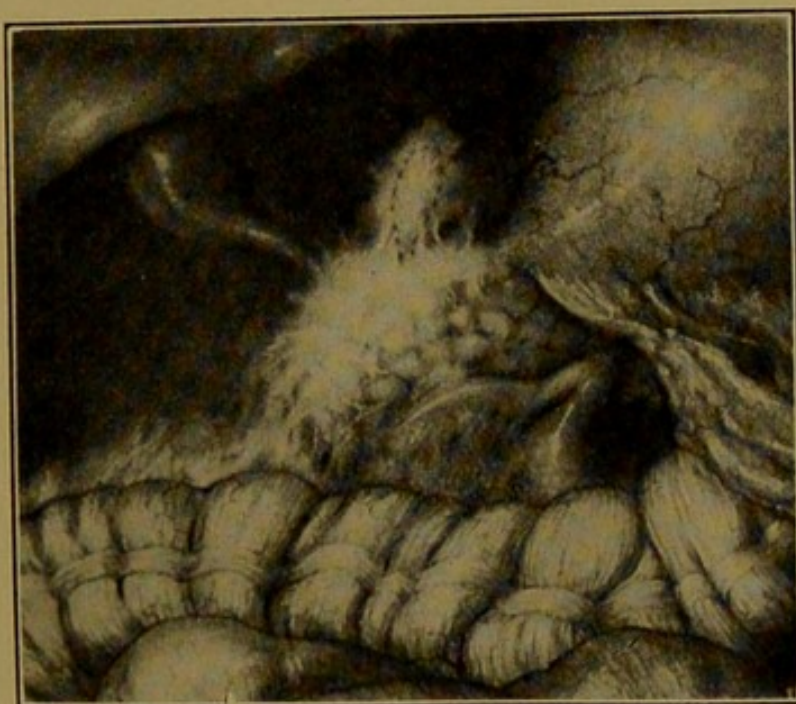


FIG. 5, Case I.—Upper part of Fig. 3, enlarged, showing more detail.

and tight, with a considerable amount of fibrous tissue, and pulled on the right half of the greater curvature of the stomach, causing it to become corrugated and somewhat concave. There were inflammatory adhesions between the gallbladder and the duodenum, one band extending directly across the pyloric sphincter to the left of the hepatic flexure of the colon. Duodenum dilated; jejunum partly collapsed, with a number of adventitious evolutionary adhesions angulating the pylorus. The longitudinal bands of the cecum were partly obliterated. The cecum was long, mobile, and dilated at the head, which was turned toward

<sup>3</sup>This picture appeared in the *British Medical Journal* for November 1, 1913, p. 1129.



the central abdominal line. Uterus retroverted and retroflexed.

*Treatment.* All bands and adhesions divided. Longitudinal bands of cecum shortened and head fixed in normal position. Malposition of uterus corrected. *Aftertreatment.* Tonics, diet, supporting belt, liquid paraffin.

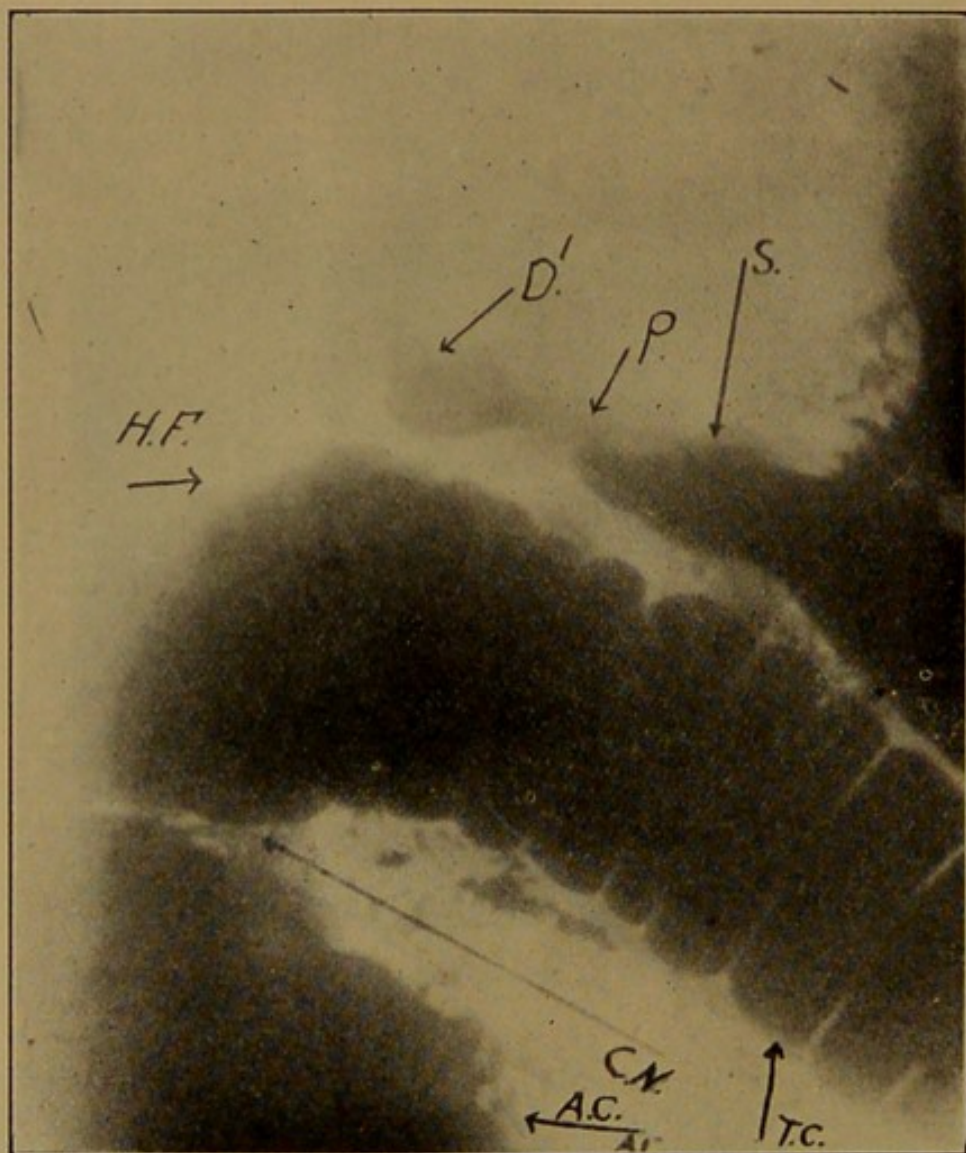


FIG. 6, Case II.—The pyloric end of the stomach marked S. The hepatic flexure of the colon; constriction marked Cn just below the hepatic flexure of the ascending colon. Picture taken immediately after the ingestion of a meal and the taking of a bismuth enema.

*Status præsens.* December 3, 1913, condition better than for many years. Had gained fifteen pounds in weight, was no longer constipated, had no severe headaches, no depression, ate everything, and had no nausea.

CASE IV. E. S. Referred by Dr. William Van Valzah



Hayes. Physician, male, aged fifty-five years, bachelor. *Previous history.* A year ago first noticed swelling of ankles, hands, and face, which disappeared promptly upon rest in bed and cathartic medication. Upon resumption of his duties this swelling returned and has persisted since. Moderate constipation for years; obstinate constipation for

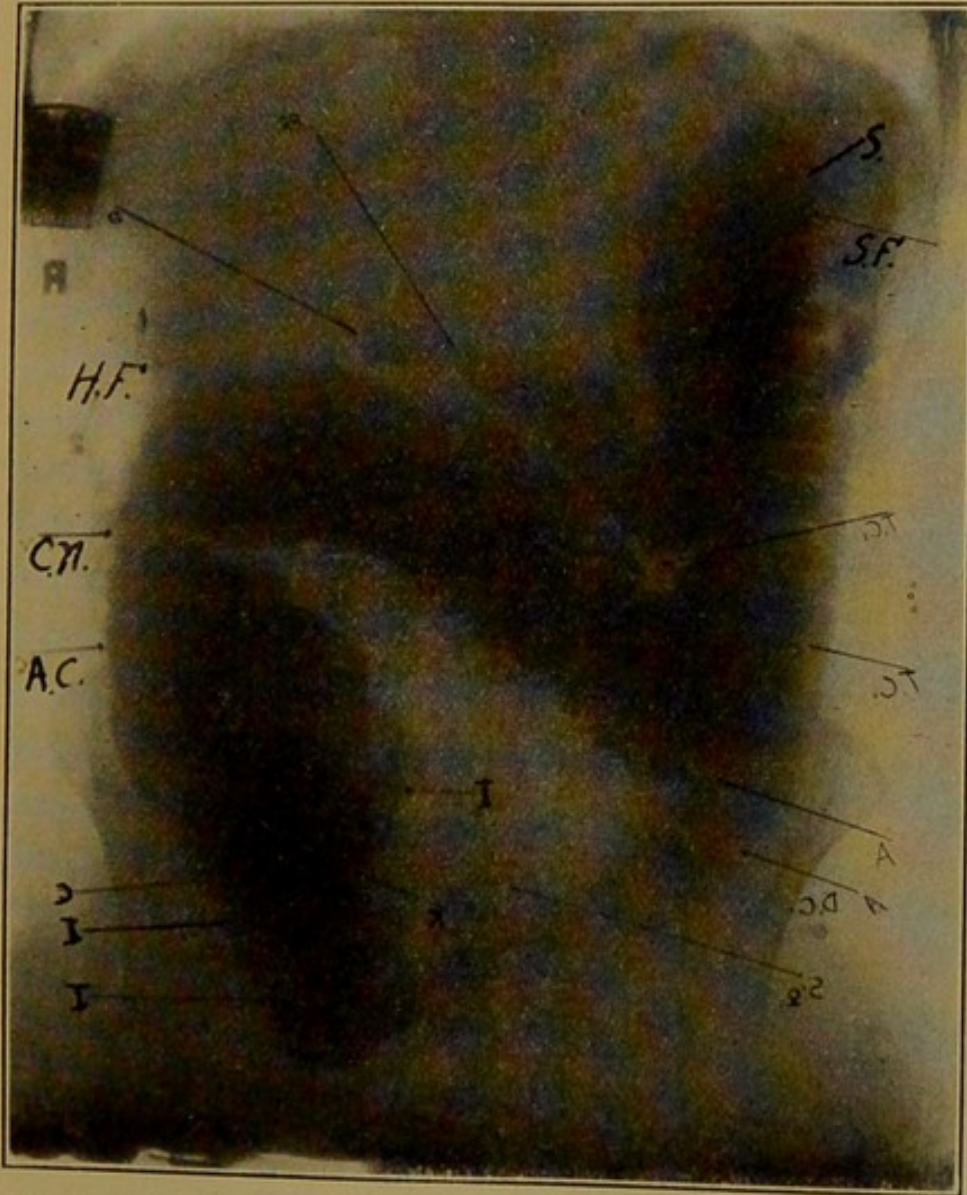


FIG. 7, Case II.—There is a bismuth meal in the stomach, and an enema in the colon. The cecum and ascending colon are dilated. Taken under same circumstances as Fig. 1.

the past year. Very nervous and emotional; drowsy after noon meal. More or less insomnia; tendency to acne; considerable backache, low down; easily fatigued. No previous operation. *Clinical diagnosis.* Chronic intestinal stasis. *Radiographic examination,* Doctor Quimby: "Evi-



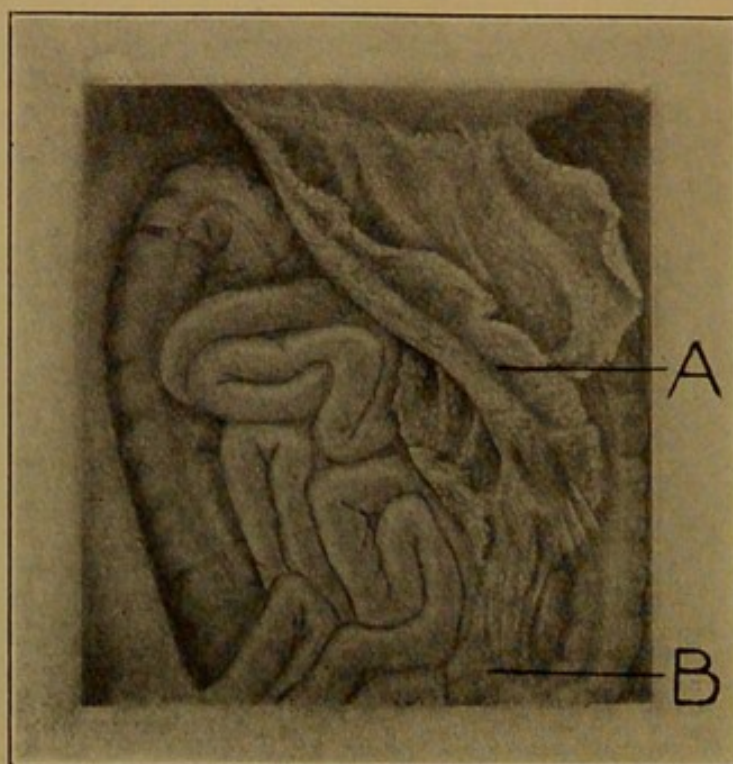


FIG. 8. Case II.—*A*, twisted omentum. *B*, adhesion between omentum and sigmoid.

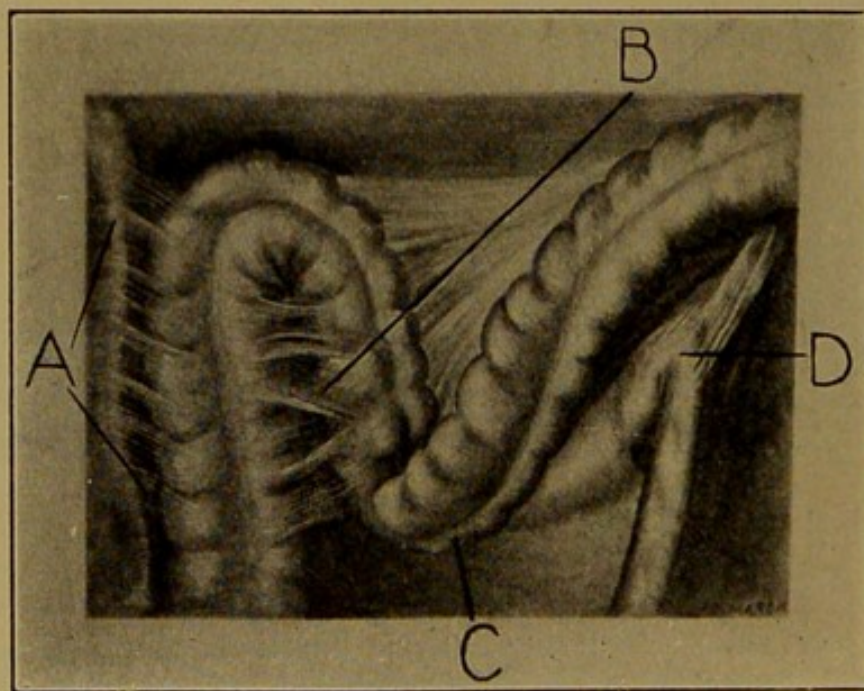


FIG. 9, Case II.—*A*, beginning Jackson's membrane; *B*, inter-colonic bands; *C*, prolapsed colon held up; *D*, duodenojejunal kink.



dence of old gastric ulcer, probably healed. Ileal stasis due to a kink and probably adherent appendix. The stasis is of pronounced degree. Angulation of the sigmoid. Redundant sigmoid."

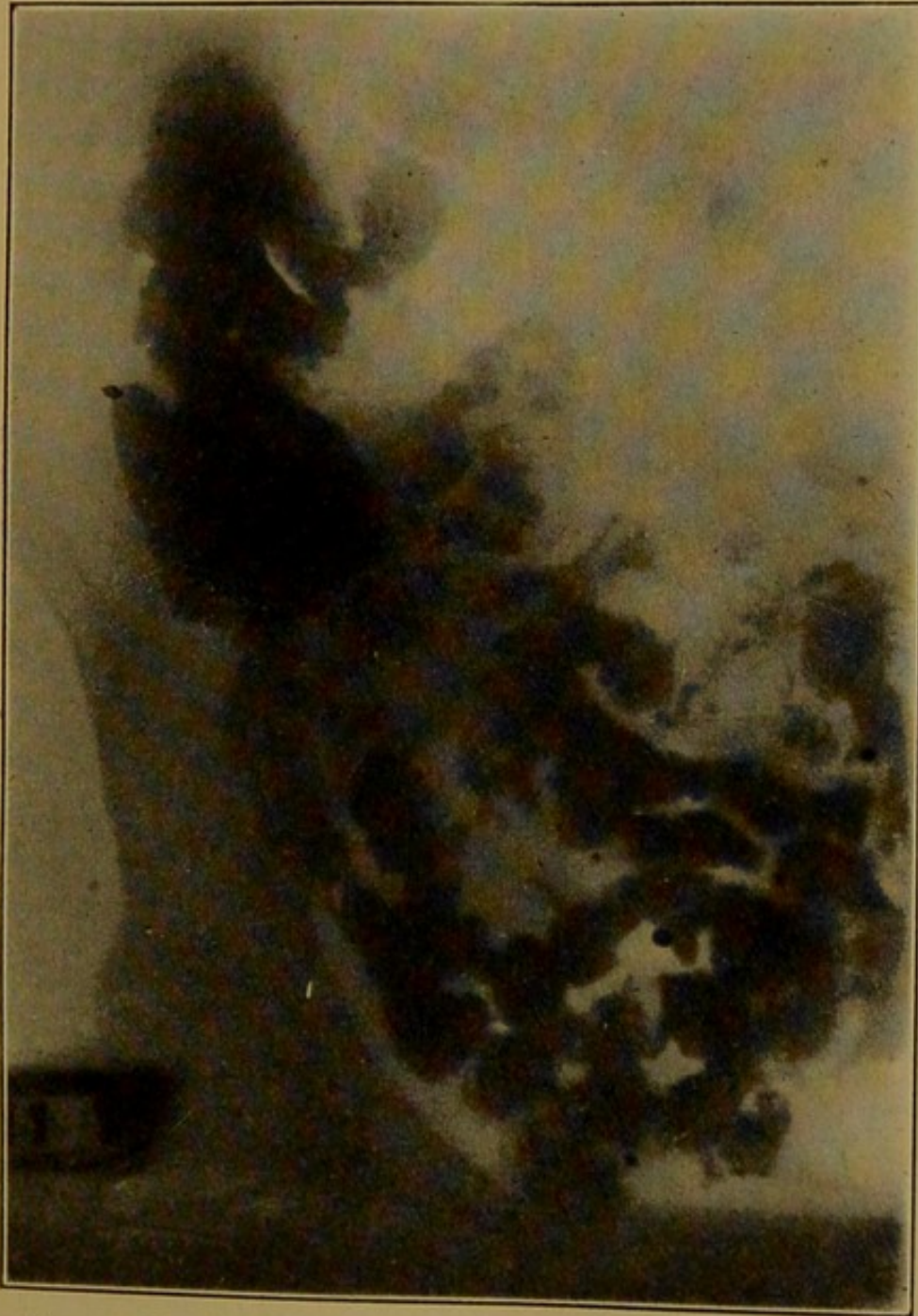


FIG. 10, Case III.—Illustrates the position of the bismuth in the lower ileum and cecum at the seventh hour.

*Operation*, June 3, 1913, New York Polyclinic Hospital.  
*Conditions found*: (Figs. 16 and 17.) Appendix angulated and adherent to the under surface of mesentery by vas-



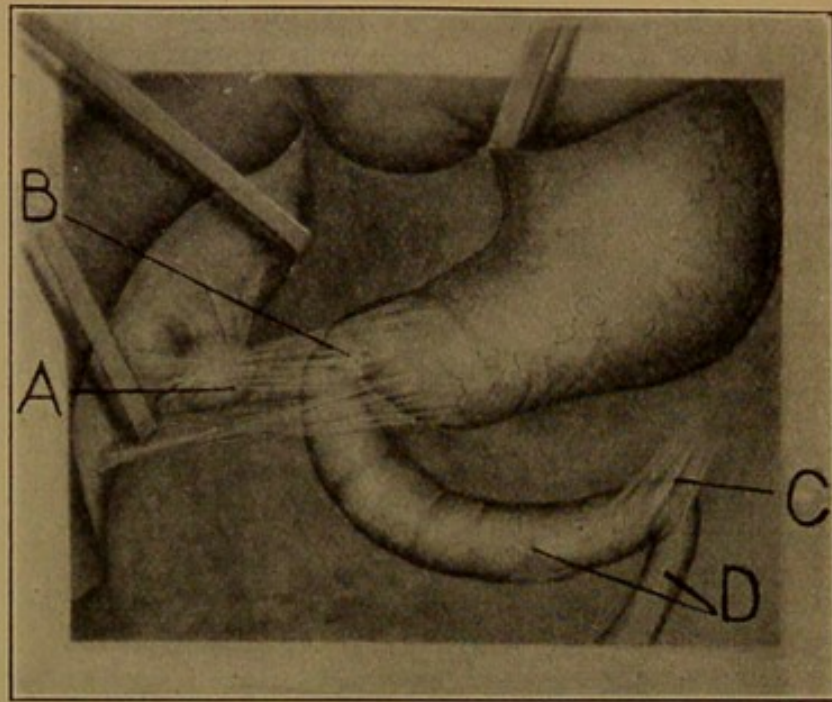


FIG. 11, Case III (from the *British Medical Journal* for November 1, 1913).—*A*, adhesions around pylorus to gallbladder and liver; *B*, pylorus angulated and narrowed; *C*, kinking at duodenojejunal junction; *D*, duodenum dilated and jejunum collapsed.

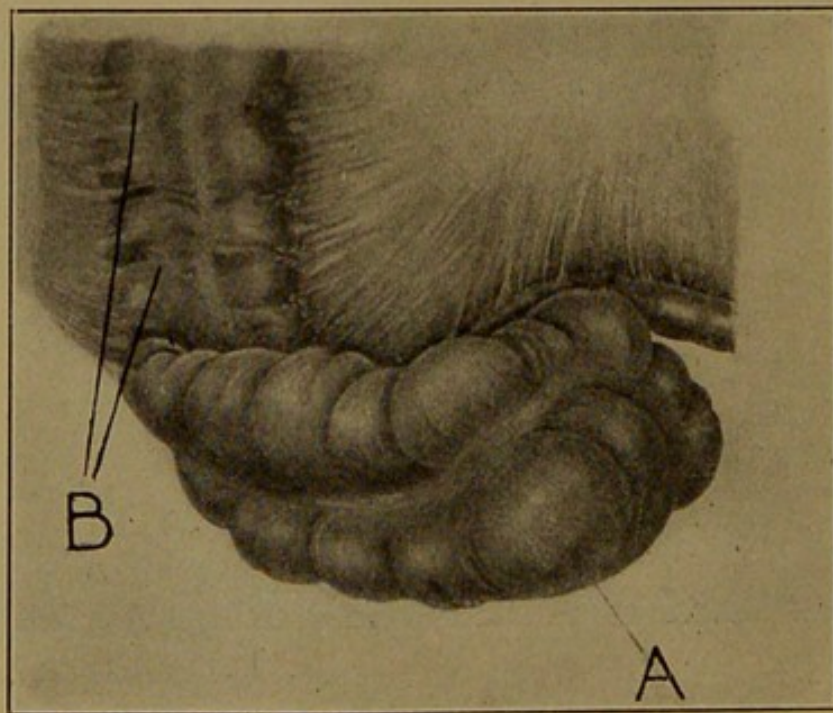


FIG. 12, Case III.—*A*, caecum mobile; *B*, Jackson's membrane.



cular bands, up to within an inch of its tip, lying parallel with the long axis of the ileum. There was no typical Lane's band, but running from the angle of the appendix just about an inch from the ileocecal valve was a thickening of the under surface of the mesentery which led into a band, this being almost like a continuation of the



FIG. 13. Case IV.—Deformed lesser curvature and gastric spasm. Evidence of an old ulcer. Residue in colon from previous enema. Picture of stomach immediately after ingestion of bismuth.

anterior muscle band and spreading outward at its base. The cecum was very mobile and a Jonnesco's fold ineffectually held the caput coli in position. A Jackson's membrane pushed across the ascending colon to the anterior longitudinal muscle band, becoming taut when the caput coli was allowed to sink and rotate into the pelvis,



as when the patient was in an erect position. This Jackson's membrane lay about the middle of the ascending colon and ended above the ileocecal valve. No duodeno-jejunal kink was found. The fundus of the gallbladder

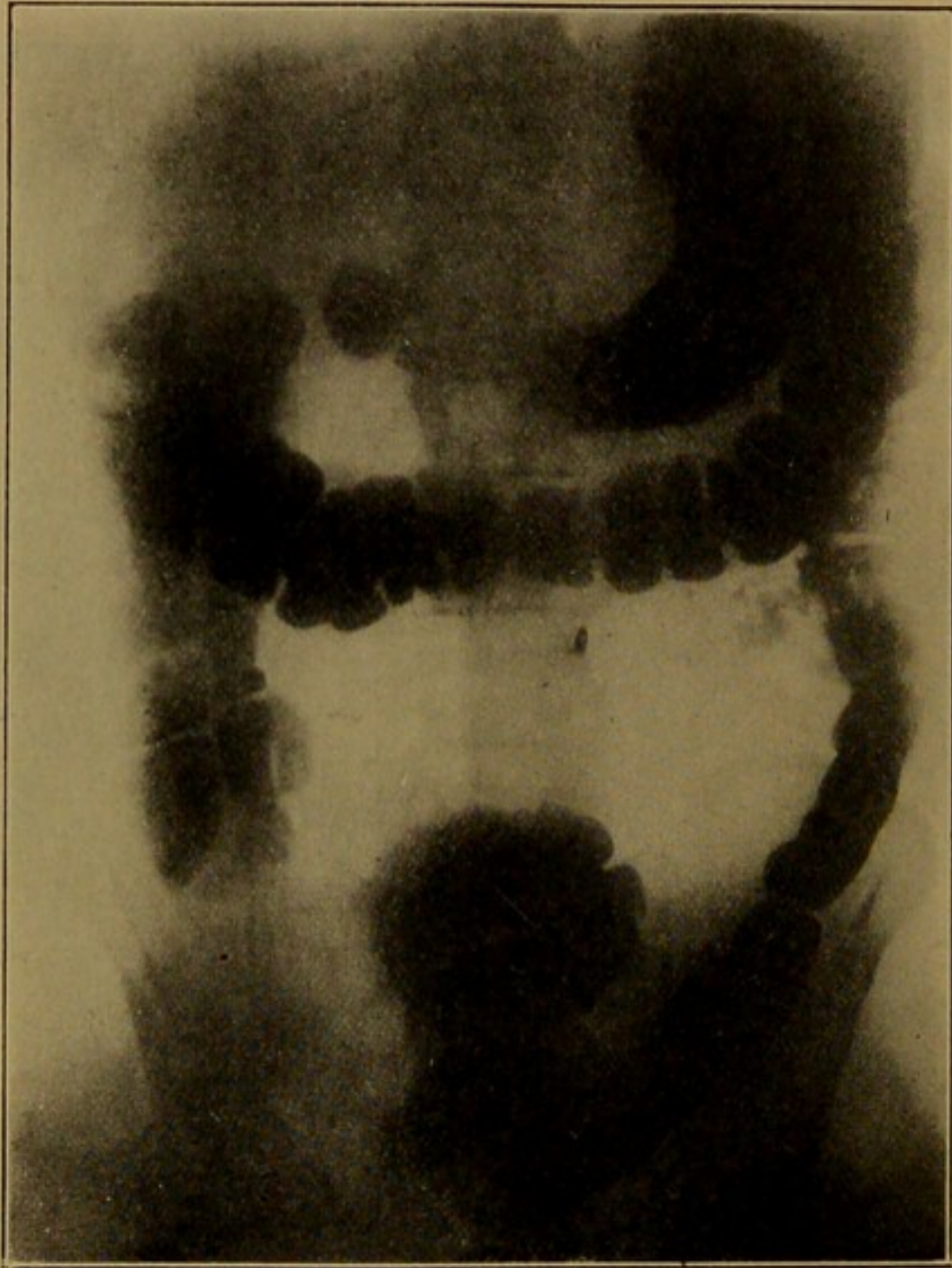


FIG. 14, Case IV.—Small amount of the enema has entered the terminal ileum, indicating a patulous ileocecal valve and angulation of the sigmoid. Some residuum in stomach, taken one half hour after ingestion and immediately after bismuth enema.

was tightly adherent to the great omentum two inches along its greater curvature by a number of avascular and vascular bands going from the pylorus toward the cardia, thus constricting the omentum. These were freed and



the body of the gallbladder was found attached by avascular bands to the gastrohepatic omentum. No gross evidence of a gastric ulcer was found, but the pylorus was slightly constricted, seemingly thickened, admitting only the tip of the index finger. The stomach was normal. The sigmoid was found somewhat redundant; below the

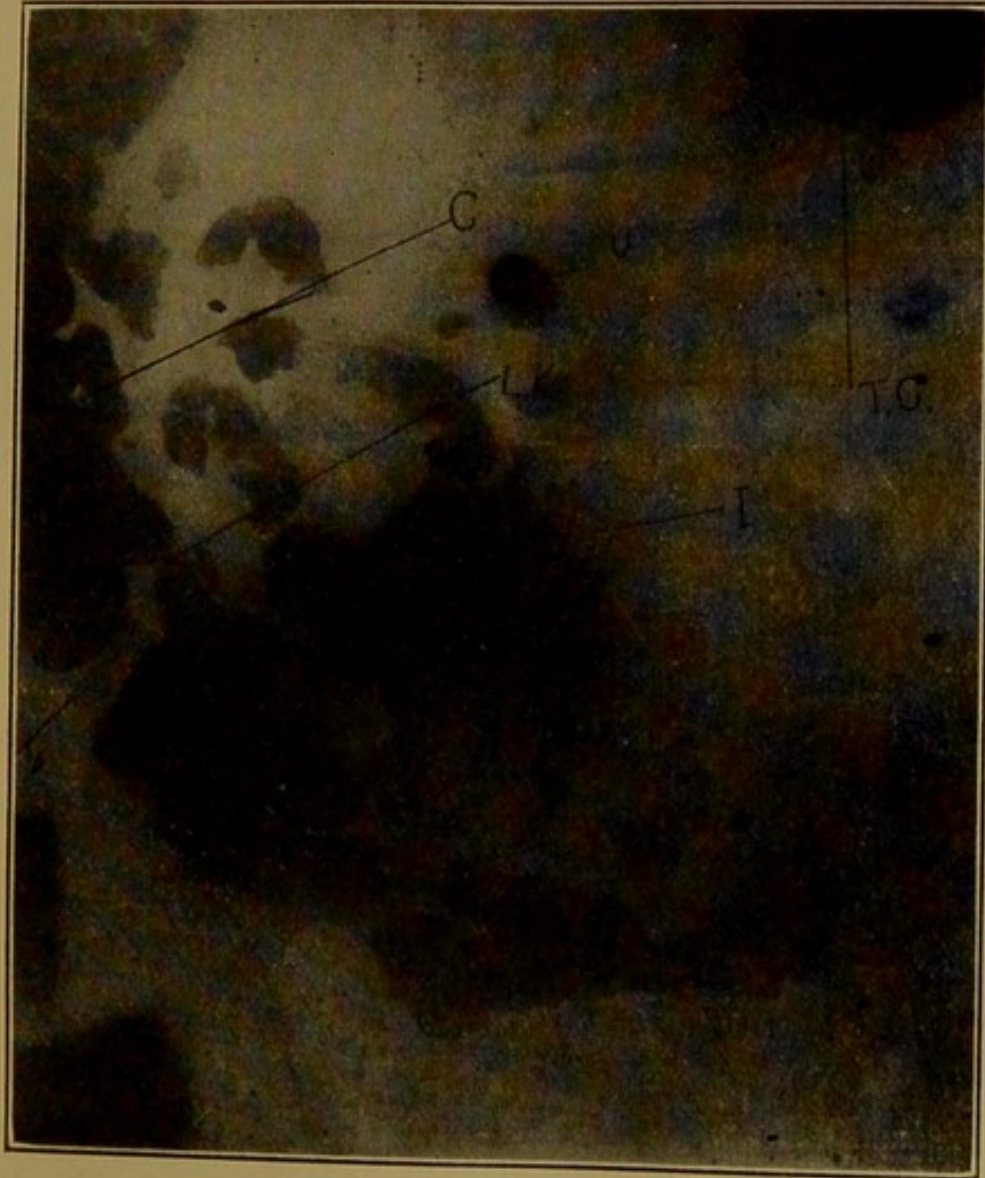


FIG. 15, Case IV.—Ileal kink and stump of adherent appendix, eight hours after ingestion of bismuth.

last normal kink there were a number of bands attaching the sigmoid to what seemed to be a condition analogous to the broad ligament in the female, also corresponding to a large Jonnesco's fold, the whole inner wall of the abdomen being thickened and pulled over toward the sigmoid. This fold extended from the brim of the pelvis



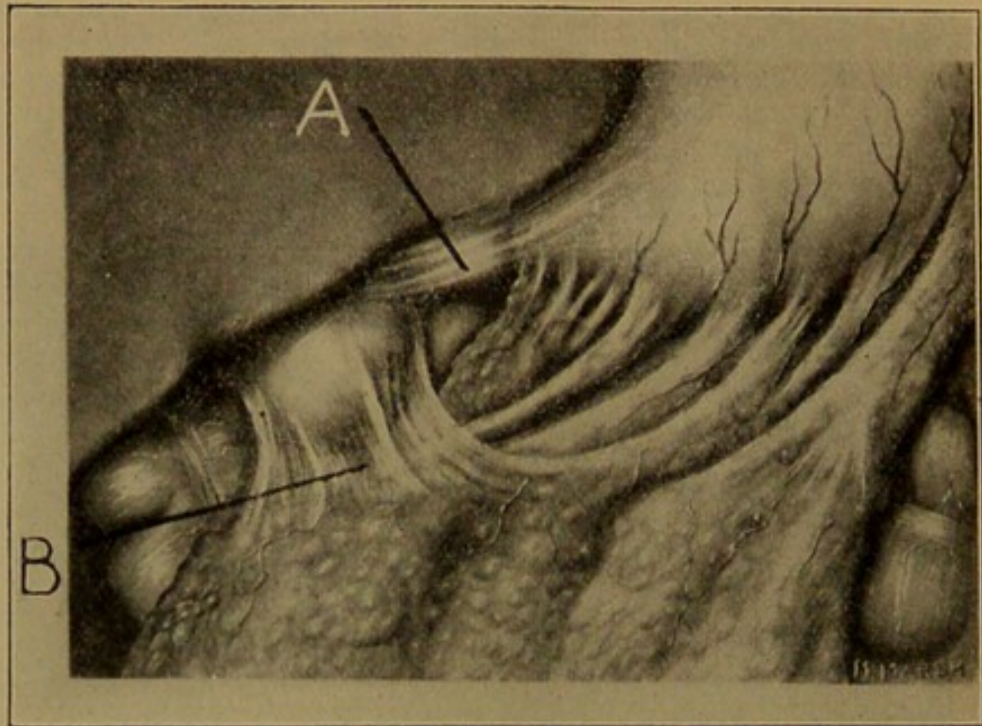


FIG. 16, Case IV.—*A*, bands between gallbladder and stomach; *B*, adhesions between omentum and gallbladder.

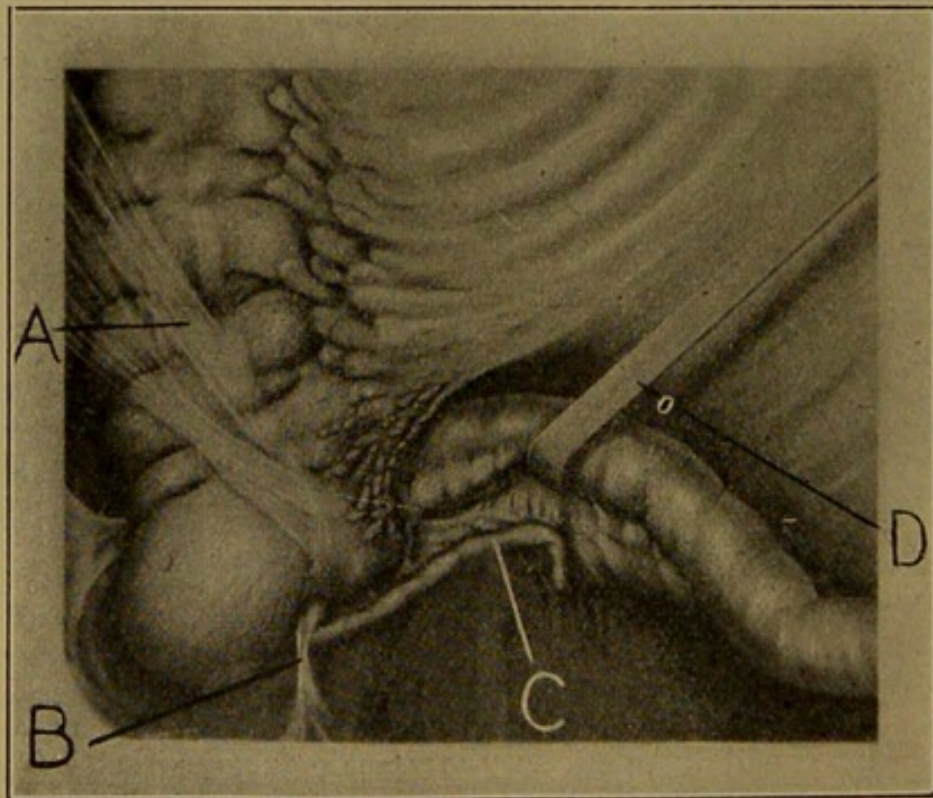


FIG. 17, Case IV.—*A*, Jackson's membrane; *B*, infracecal band; *C*, appendix angulated and adherent to under surface of mesentery of terminal ileum; *D*, retractor holding up terminal ileum.



to the cavum Retzii, forming a shelf to which the sigmoid was attached by several avascular bands, almost like tissue paper in appearance, which pulled this fold into its shelflike position.

*Treatment.* Appendix removed, which released the beginning Lane's band. Raw surfaces under ileum carefully covered. Caput coli fastened into normal position. Bands

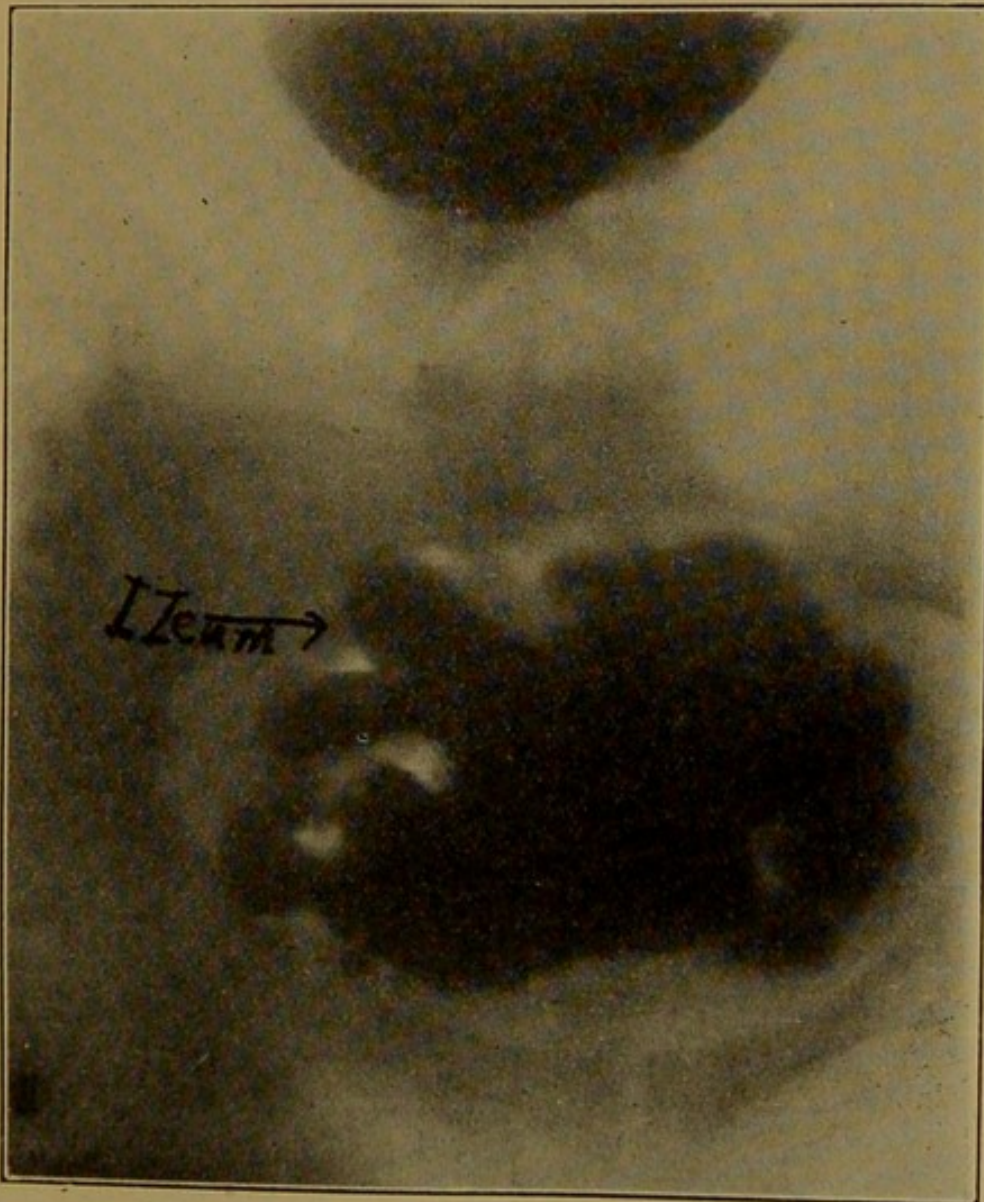


FIG. 18, Case V.—A six hour accumulation in the terminal ileum; nothing has entered the cecum.

about gallbladder severed and all raw surfaces covered. Pylorus stretched so that it admitted easily the entire index finger. Bands about sigmoid, corresponding to Jonnesco's fold, cut transversely and sutured longitudinally, allowing the fold to fall back toward the abdominal wall. *After-treatment.* Liquid paraffin, abdominal belt.



*Status præsens.* November 28, 1913, at a dinner given in honor of Sir Arbuthnot Lane, in New York, in an after-dinner speech the patient spoke of "being made over," and of expecting soon to resume practice. Other engage-

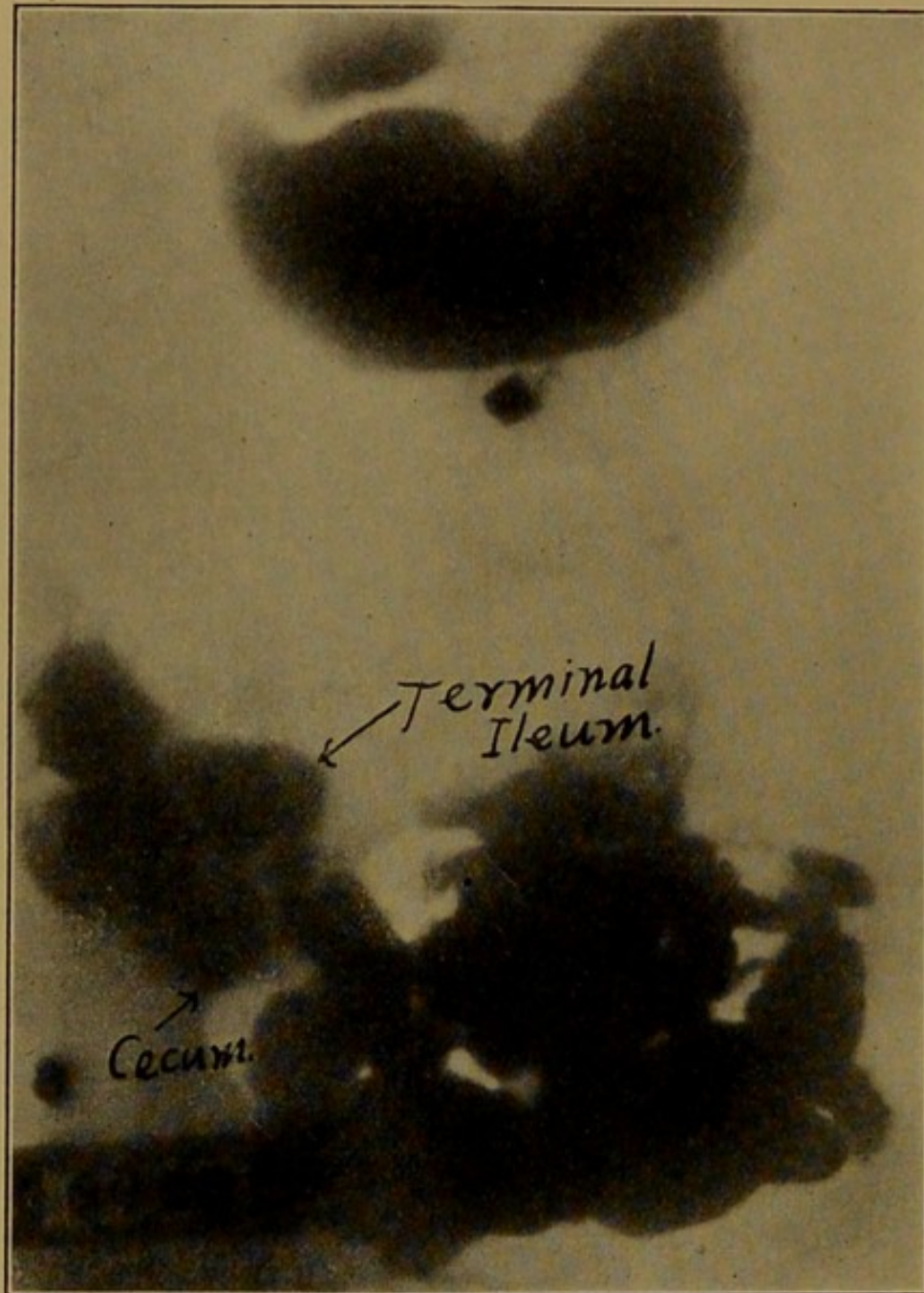


FIG. 19, Case V.—A residue in the stomach at eight hours. In the lower portion of the cut can be seen bismuth in the terminal ileum and cecum.

ments prevented his attending this meeting. Reported considerable gain in flesh and strength; bowels were easily controlled by the use of paraffin.



CASE V. E. H. Referred by Dr. William Van Valzah Hayes. Female, aged forty years, single. *Previous history.* Ulcer of stomach, with vomiting of two cups of black blood twelve years ago. Headache all her life. Attacks lasting one half to sixteen hours, of headache, nausea, vomiting, with photophobia, for years. Constipation; acidity

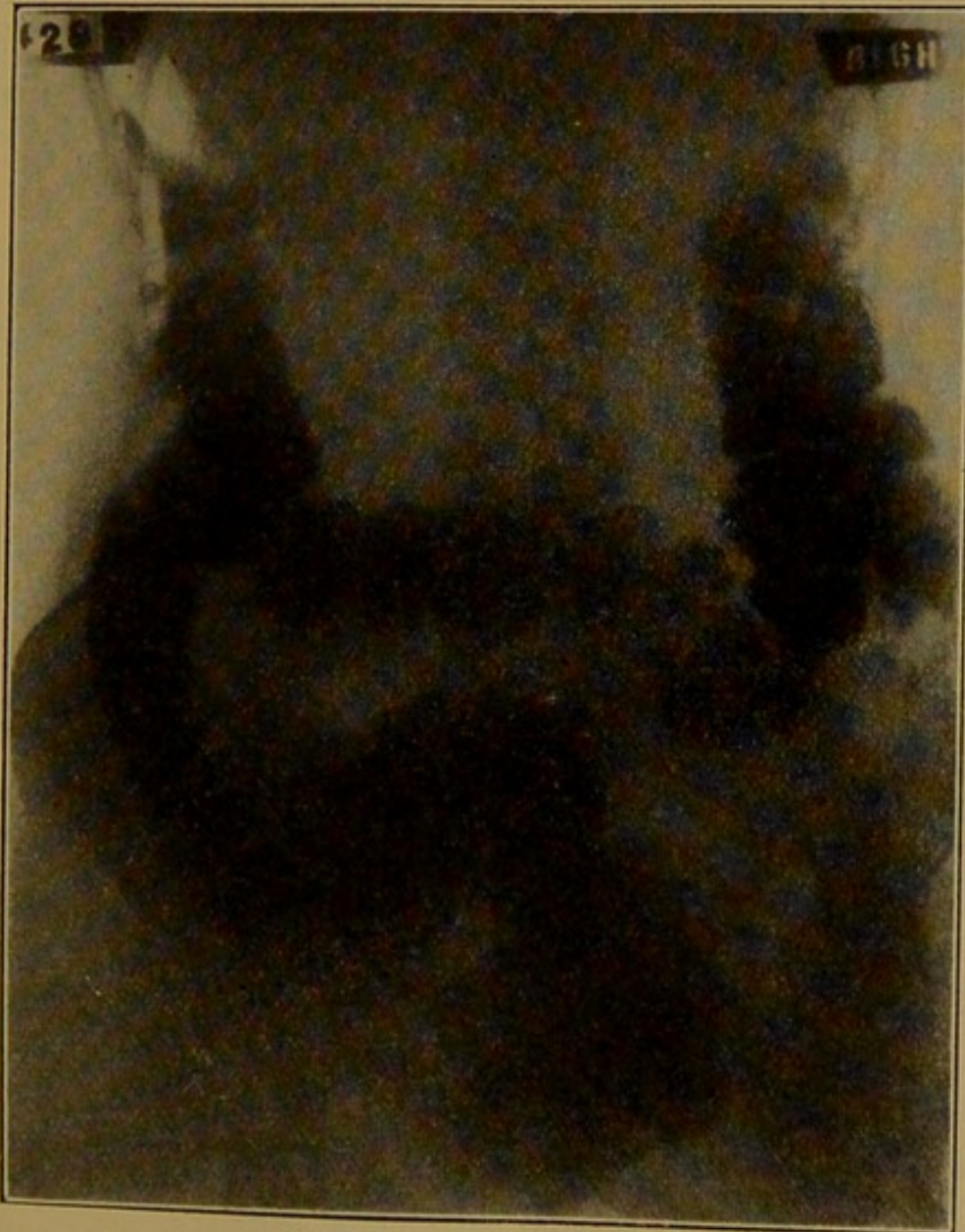


FIG. 20, Case V.—An enema has been administered which has filled the entire colon, except the cecum.

of stomach; hemorrhoids. General abdominal soreness at frequent intervals. Subject to hay fever.

*Clinical diagnosis.* 1. Partial obstruction of pylorus; 2. abdominal adhesions; 3. ileal stasis. *Radiographic diagnosis,* Doctor Quimby: "A healed ulcer on the lesser



curvature. Adhesions of the first portion of the duodenum. Gastric stasis, due to interference at the junction of the first and second portion of the duodenum. Ileal stasis, due to adhesions, with a preexisting Lane's kink. Adhesions of transverse colon to the cecal structures. Stasis in the sigmoid."

*Operation*, January 7, 1913, New York Polyclinic Hospital. *Conditions found*: (Figs. 21 and 22.) Duodenum the site obstruction; only tip of smallest finger with difficulty inserted. Pylorus thickened. Some angulation of pylorus. 2. Marked kinking of duodenojejunal juncture with dilatation of duodenum. 3. Lane's kink, band marked, but narrow. Ileal stasis. Cæcum mobile. Appendix adherent to band. 4. Slight Jackson's membrane.

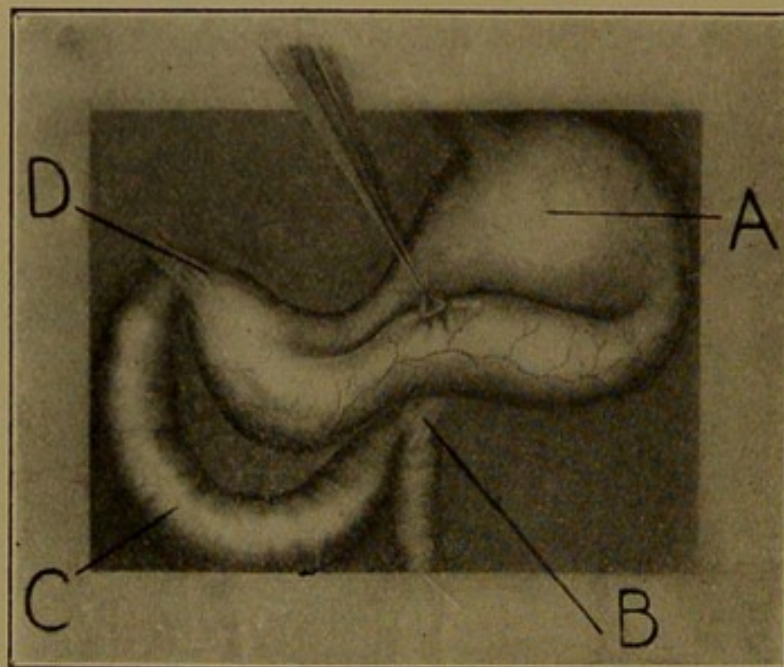


FIG. 21, Case V.—A, dilated stomach held up by forceps; great omentum not pictured; B, bands at duodenojejunal junction; C, dilated duodenum; D, bands about pylorus.

*Treatment*. 1. Pyloroplasty (Heineke-Mikulicz). 2. Duodenojejunal kink stretched and some fibres divided. 3. Lane's band cut transversely and sutured longitudinally. 4. Appendix removed. 5. Cecum put into position. *After-treatment*. Liquid paraffin; abdominal belt.

*Status præsens*. Last seen six months after operation. At that time was very much better in every way. Lost sight of since.

CASE VI. W. K. Referred by Dr. William Van Valzah Hayes. Male, aged thirty-six years, married. *Previous history*. Chief symptoms began in 1907. Canker sores in mouth; anorexia; tongue coated; gas in stomach; ten-



derness in region of appendix. Stained color to skin. Appendectomy done. Medical treatment for ulcer of stomach, May, 1912. Duodenal feeding for four weeks. Improvement only temporary. Could seemingly not get far with treatment. Usual symptoms of moderate stasis.

*Clinical diagnosis.* Chronic intestinal stasis, with adhesions about scar and site of appendicitis stump. *Radio-graphic diagnosis,* Doctor Quimby, December 19, 1912: "Pyloric ulcer. Duodenal adhesions. Duodenal delay at the junction of the first and second portions. Lane's kink. Constricting band across the ascending colon about 5 cm. from the hepatic flexure."

*Operation,* February 19, 1913, New York Polyclinic Hos-

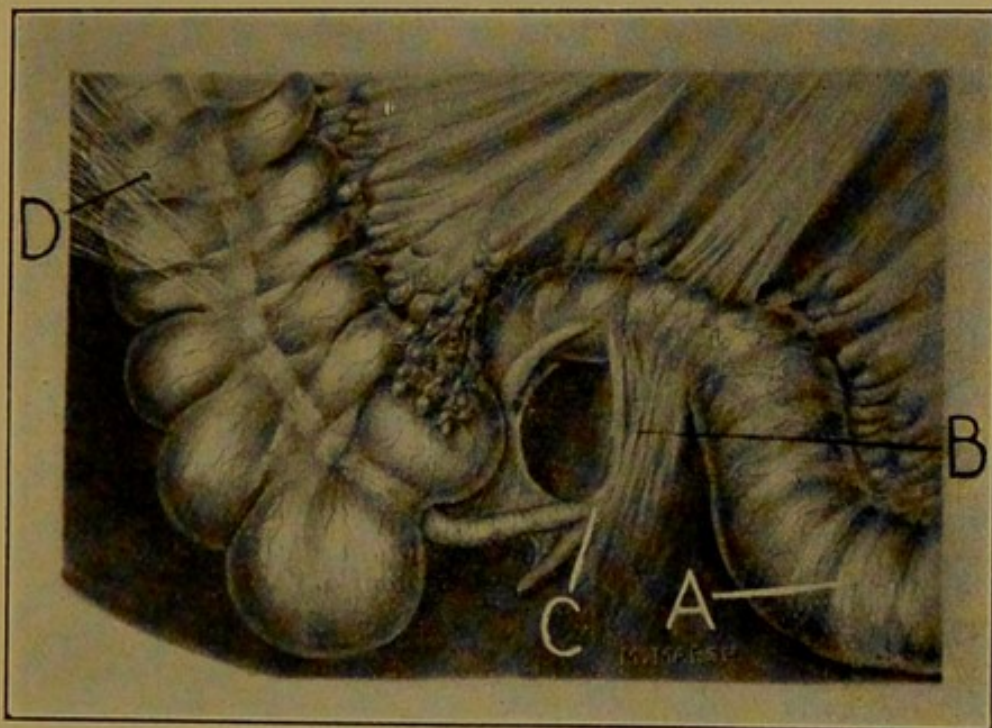


FIG. 22.—Case V.—A, dilated ileum proximal to Lane's band; B, Lane's band; ileopelvic band; C, angulated appendix caught in band; D, Jackson's membrane.

pital. *Conditions found:* (Fig. 24.) Duodenum the site of a few cobweb adhesions. Pyloric opening readily allowed invaginated stomach and index finger of operator to enter. Lane's kink about  $1\frac{1}{2}$  inch from cecum. Post-operative adhesions, a broad band,  $1\frac{1}{2}$  inch wide, fastening cecum and adjoining ileum to a point in abdominal wall anteriorly and externally. Fairly firm, though small bands of adhesions, holding first portion of jejunum upward to left. Band across ascending colon.

*Treatment.* Bands and adhesions severed; peritoneum sutured over bared area. Intestines and omentum placed



in normal position. *Aftertreatment.* Liquid paraffin; abdominal belt.

*Status præsens.* December 1, 1913, reports by letter, much improved in every way. Great change from past few years.

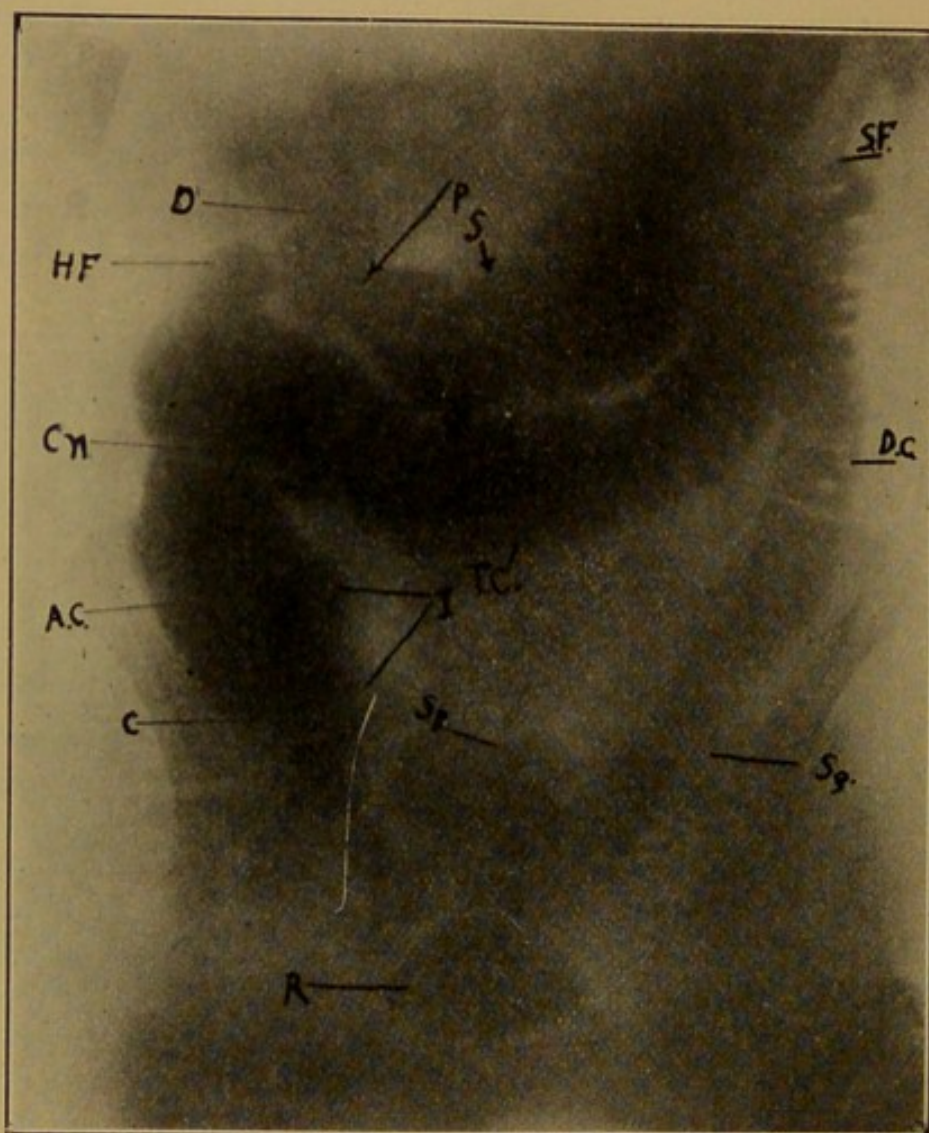


FIG. 23. Case VI.—The stomach contains a meal of bismuth, while an enema has been administered containing the same material. It will be observed that it has passed through and accumulated in the terminal ileum. C, cecum; I, ileum; A.C., ascending colon; Cn, constriction; H.F., hepatic flexure; D, duodenum; P, pylorus; S, stomach; T.C., transverse colon; S.F., splenic flexure; D.C., descending colon; Sg., sigmoid; R, rectum. Taken immediately after meal and bismuth enema.

CASE VII. F. E.<sup>4</sup> Referred by Dr. Loy McAfee Inghram. Female, aged thirty-five years, married, two children. *Previous history.* Diagnosis of tuberculosis of both

<sup>4</sup>Presented at meeting.



lungs made in the Department of Clinical Diagnosis, New York Polyclinic Medical School and Hospital, service of Doctor Beal, in the spring of 1910. Sent to Seton Hospital for tuberculous patients. While there first noticed gastrointestinal symptoms. Severe pains in abdominal region; vomited blood and food immediately after meals and at varying intervals between meals. Gradual emaciation, loss of strength, continued nausea and vomiting, with expulsion of large quantities of bile. Three previous laparotomies: 1. Gastroenterostomy, January, 1911; 2, the "breaking up of adhesions" resulting from first operation, Febru-

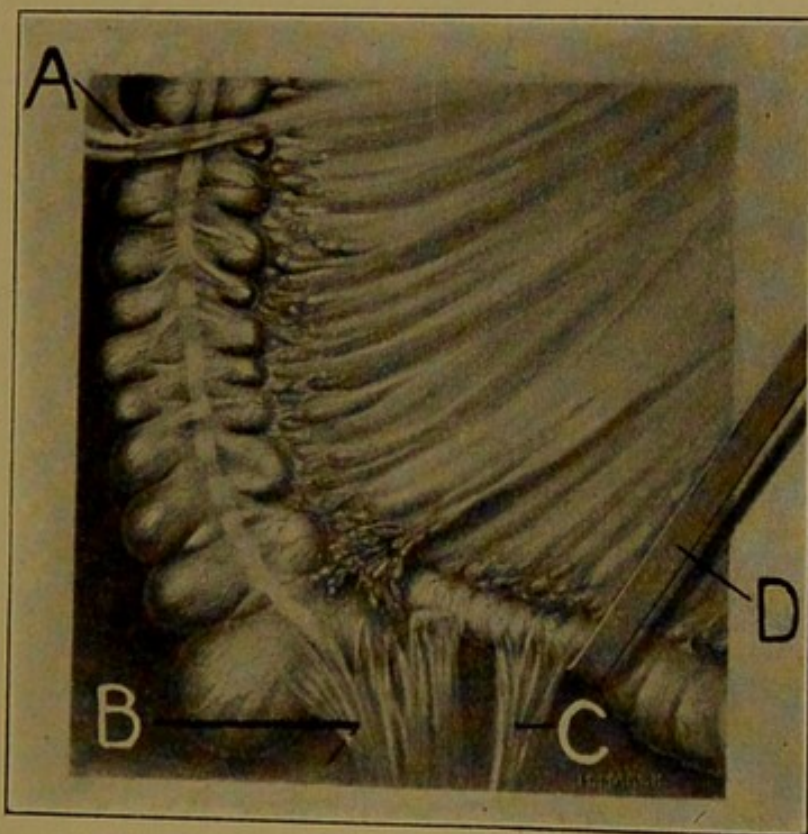


FIG. 24, Case VI.—A, band across ascending colon constricting intestine; B, adhesions at site of appendix stump; C, ileopelvic band; D, retractor holding up terminal ileum, exposing band.

ary, 1911; 3, the "breaking up of adhesions," January, 1912. After the second operation was sent to a home for incurables, presumably to die. Temporary improvement after the last operation. Sent to me, February 13, 1913. At that time a mere shadow. Looking back, a clear history of intestinal stasis for years.

*Clinical diagnosis.* Chronic intestinal stasis. Vicious circle and abdominal adhesions. *Radiographic diagnosis,* Doctor Quimby: "Ileal stasis, probably due to a Lane kink, although the distorted terminal ileum is suggestive of adhesions. The greater curvature is at the level of the



umbilicus. Pylorus is 4.5 cm. above, and one cm. to the right of umbilicus. The stomach contents are discharged by way of the pylorus, and an opening on the greater curvature, probably producing a vicious circle."

*Conditions found on laparotomy:* (Fig. 27.) A mass of adhesions, dragging liver down under the laparotomy wound, opposite anterior superior spine of left side. Left lobe of liver adherent to anterior abdominal wall, to transverse colon, to great omentum, and to stomach. In right

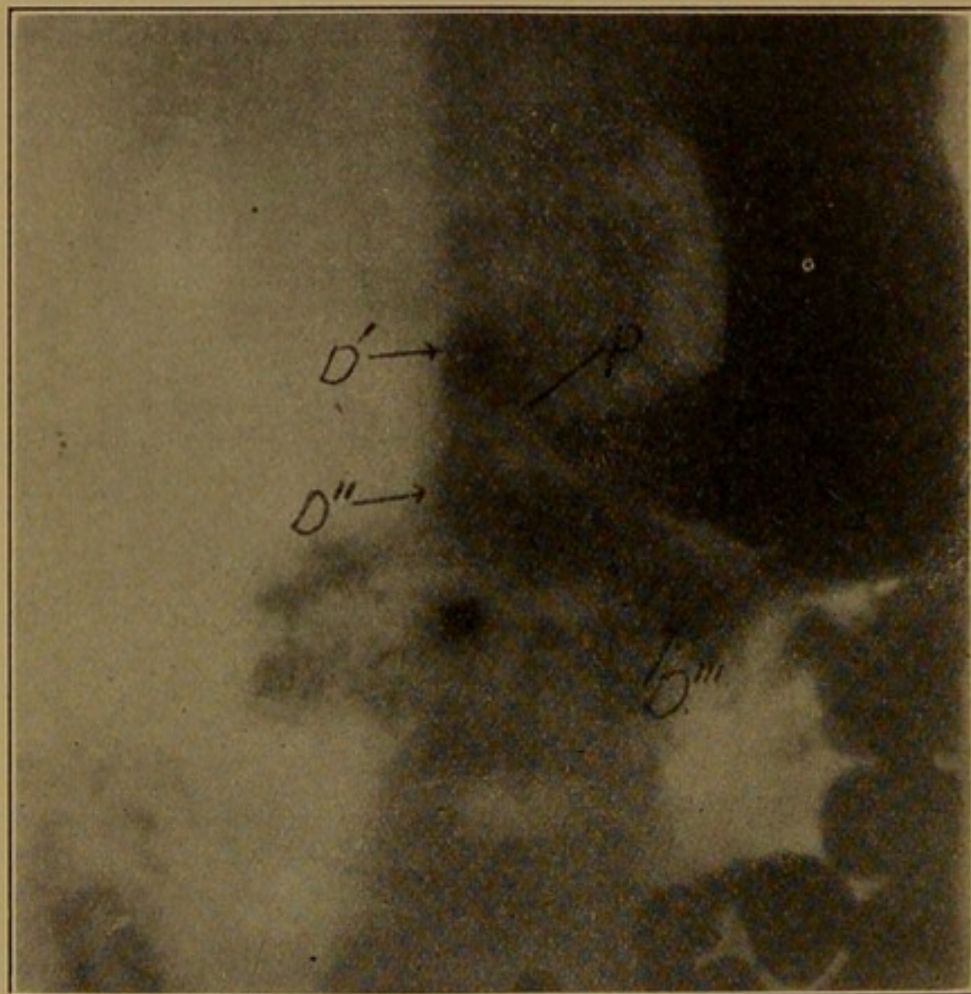


FIG. 25, Case VII.—*P*, pylorus; *D'*, first portion of the duodenum; *D''*, second portion of the duodenum; *D'''*, third portion of the duodenum. Taken immediately after ingestion of bismuth.

iliac fossa a band of adhesion passed from greater curvature of stomach to anterior abdominal wall, to mesocolon, and to posterior abdominal wall, causing constriction just above ileo-cecal valve. The cecum was rotated outward, its butt being turned up toward the diaphragm. Appendix normal, but rather atrophic. A beginning ileal kink about five inches from ileo-cecal valve. Pylorus patulous, admitting index finger. Liver slightly enlarged, it being neces-



sary to remove a small part of the liver with adhesions in order to see the pylorus. By lifting up the transverse mesocolon and gastroenterostomy site could be seen. This artificial opening admitted three fingers. Adhesions found between transverse colon and jejunum. Two kinks in descending colon.

*Treatment.* Enormous mass of adhesions about liver with difficulty broken up. All bands severed and raw sur-

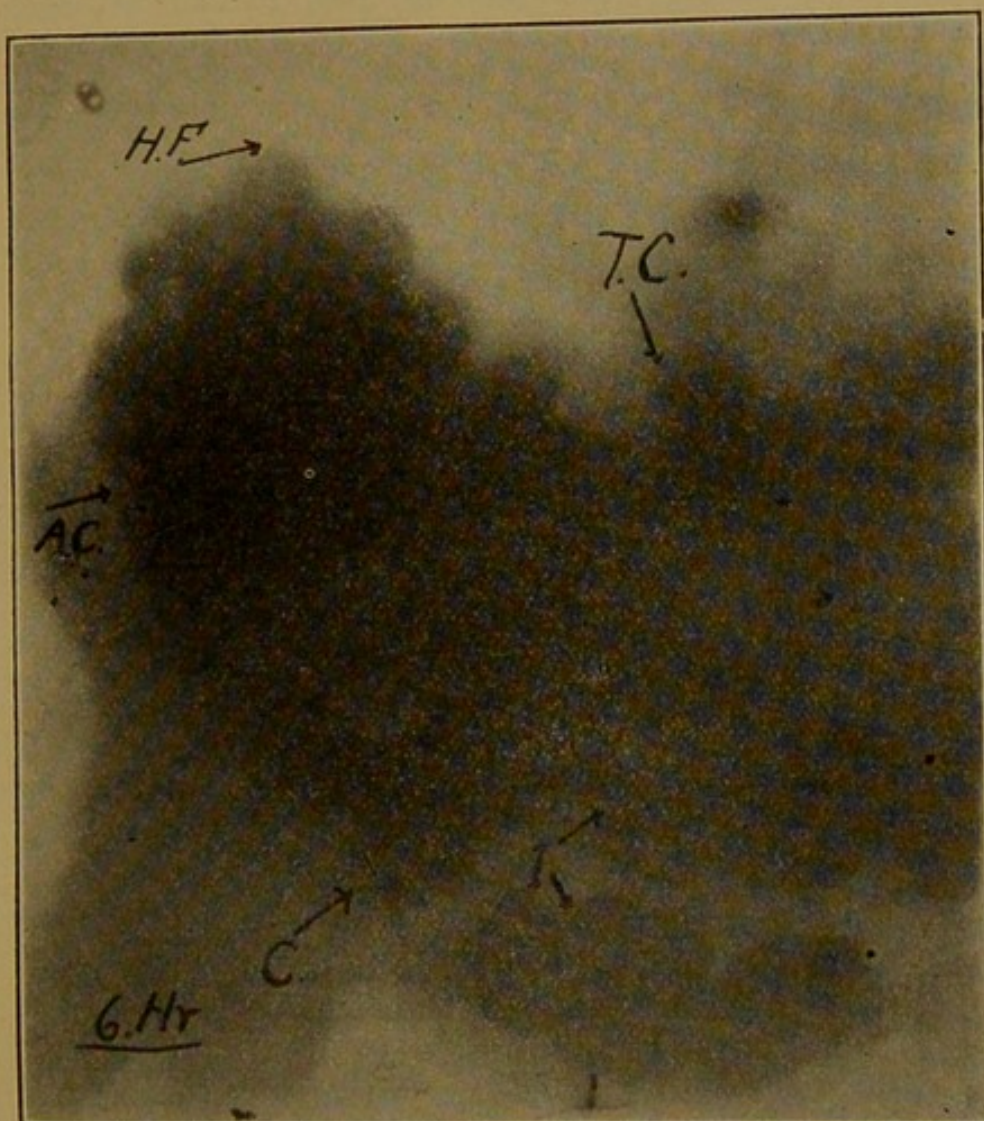


FIG. 26, Case VII.—*I.*, ileum; *C.*, cecum; *A.C.*, ascending colon; *H.F.*, hepatic flexure; *T.C.*, transverse colon. This is the six hour progress of the bismuth meal; an accumulation remains in the lower ileum. As the bismuth has advanced rapidly because of the patulous gastroenterostomy wound, we cannot regard this as a normal index of the progress of the meal.

faces covered over. Appendix removed. Ileal kink cut and sutured. Caput coli restored to normal position. It was decided, by conference with Mr. E. G. Schlessinger, of Guy's Hospital, London, who assisted at the opera-



tion, that the safer procedure to be followed with reference to the stomach was to close the pylorus, which was done, and to do an enteroenterostomy, giving a free passage of the stomach contents through the gastroenterostomy opening, and on through the enteroenterostomy opening below. This procedure was followed. *Aftertreatment.* Liquid paraffin; restricted diet; abdominal belt.

*Status præsens.* December 15, 1913, patient in much better condition than for years. The color had returned to face and lips, appetite was good, she was gaining in flesh and strength, and able to retain everything she ate.

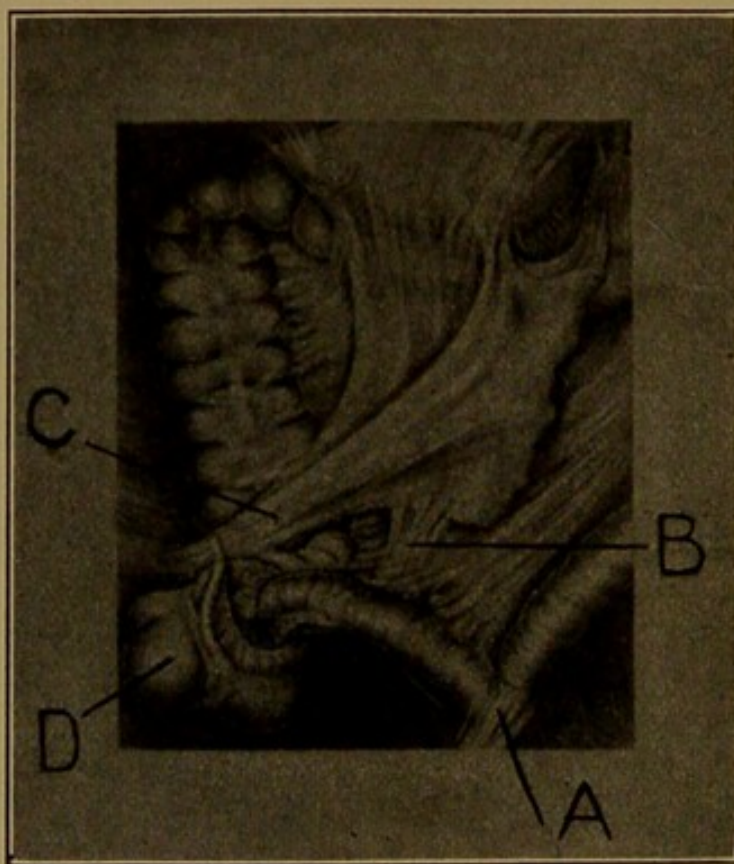


FIG. 27. Case VII.—*A*, ileopelvic band; *B*, adhesion omentum to upper leaf of mesentery; *C*, omentum thickened, attached to abdominal wall external to colon; *D*, cecum twisted upon itself; appendix attached to band passing in front of ascending colon and causing constriction.

Practically made over from an absolute invalid to a fairly healthy and happy woman.

I have endeavored, by means of these few case histories and pictures, to demonstrate very briefly the existence of the various conditions which cause, and the results produced by, chronic intestinal stasis. It must be borne in mind that we must



study the x ray plates, the fluoroscopic findings, and the drawings made at the operation with an appreciation of mechanical conditions. When the subject is in the prone position, as on the operating table, these kinks and angulations may not be apparent. When in the upright posture, as when standing, or in the reverse Trendelenburg position on the table, or if the organs are carefully held up, the constricting bands and the resulting kinks become far more apparent. This mechanical fact perhaps explains the difficulty experienced by many surgeons in "seeing the kinks." Added experience, however, with these changes of position borne in mind, has practically eliminated the former doubt concerning the existence of these "crystallizations of lines of strain," as Lane has called them, and the resultant slowing of the passage of the contents of the great drainage system of the body.

Just how far the admirable pioneer work of Lane in the study of chronic intestinal stasis will lead us, time and further study must determine. We no longer question the far reaching relationship of chronic intestinal stasis to many conditions which were formerly considered distinct disease entities. Lane, as is well known, has repeatedly emphasized a series of affections brought about by the enfeebled resistance which the tissues offer to the invasion of microbes. Among these may be mentioned here, pyorrhœa alveolaris; tuberculosis; rheumatoid arthritis; thyroid adenoma or general hypertrophy, or even exophthalmic goitre; Still's disease (polyarthritis affecting children and marked by enlargement of the lymph nodes); infections of a purulent nature in the skin; ulcerating endocarditis, and many other affections. It may be predicted that many skin diseases, notably psoriasis, are initiated or rendered more severe and persistent by chronic intestinal stasis. The mental depression of stasis patients has been so uniformly noted, that the question arises as to how far many of the milder forms of mental derangement, epilepsy,



criminal insanities, etc., may be influenced by the interference with normal body drainage.

Intestinal stasis presents a wide field for research on the part of the physician and surgeon; at the same time it opens the door of hope for many a person who would otherwise be considered as doomed to chronic invalidism.

#### REFERENCES:

Other phases of the subject of chronic intestinal stasis are discussed by the author in the following contributions: (1) Intestinal Stasis in Relation to Cancer Etiology and Prophylaxis, *Journal of the Medical Society of New Jersey*, July, 1912. (2) The Surgical Treatment of Chronic Intestinal Stasis, *The American Journal of Gastro-Enterology*, July, 1913. (3) Chronic Intestinal Stasis, *Maine Medical Journal*, July, 1913. (4) A Contribution to the Study of Chronic Intestinal Stasis, *Medical Record*, September 27, 1913. (5) Remarks on Chronic Intestinal Stasis; with Reference to Conditions Found at Operations and the Mortality, *British Medical Journal*, November 1, 1913. (6) The Significance of Intraabdominal "Bands," "Folds," and "Veils," presented before the Twenty-third Annual Meeting of the Western Surgical Association, St. Louis, December 10, 1913, *Boston Medical and Surgical Journal*, February 19, 1914, and *Transactions of the Association*. (7) Chronic Intestinal Stasis: A. Types of Cases. B. Preventive and Medical Treatment Outlined, *Woman's Medical Journal*, January, 1914.

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