The **treatment** of constipation involves management as well as medicine. It is well to have a regular time to endeavor to empty the rectum. Straining is not beneficial, as it endangers piles or prolapsus ani; but the act of defecation may be facilitated by kneading the lower half of the abdomen with the hands, so as to increase and aid peristaltic contraction.

In diet, fresh and stewed fruits are the best natural laxatives. Prunes are especially opening. Bran bread, by the mechanical quality of the particles, is somewhat of a peristaltic persuader. Molasses occasionally will do, but it is too acescent to be taken constantly.

Of medicines, simple rhubarb, or pills of rhubarb and castile soap, one and a half grains each, may come first; afterwards podophyllin [F. 82], colocynth, aloes, etc., if needed for especial torpor. An occasional dose of senna infusion may give a good start to the bowels. Better than to take medicine every day or two, will be the use sometimes of *enemata*. An injection of warm water alone may answer at first. Then white soap, and afterwards brown soap may be added; salt and molasses, sweet oil or castor oil when the former fail. A *suppository* of soap [F. 83] is less disagreeable to some persons, and will generally act well.

Where the torpor of the rectum approaches a paralytic state of the muscular coat, nux vomica will be very important [F. 84, 85]. The addition of belladonna to laxative pills for chronic constipation is a not uncommon practice. Electricity may assist in relieving the same condition.

ENTERITIS.

Definition.—Inflammation of the bowels.

Symptoms.—Pain in a portion of the abdomen, increased by motion or pressure; constipation; fever. Later, abdominal swelling, vomiting, and mucous, sanguinolent, or even purulent diarrhœa in bad cases.

Causes.—Blows or other injuries; neglected constipation, exposure to cold and wet. Corrosive poisons, as arsenic, etc., also cause enteric inflammation; and it is a part of the results of strangulated hernia or other intestinal obstruction.

Treatment.—A decidedly open and *active* case may require early venesection in the robust. Leeching should be the rule; and it may generally be free. After that, poultices, of flaxseed meal or Indian mush, covered with oiled silk to retain moisture. Soft food alone can be taken, as arrowroot, oat-meal gruel, etc., or, for weak persons, beef-tea. No medicine will do any good, unless it be opium in moderate doses, to relieve severe pain and promote rest. Cathartics are to be avoided, and entire stillness of the body in bed must be maintained. From slight or moderate inflammation of the bowels recovery may be confidently expected, with care; but aggravated cases of it are frequently fatal.

Typhlitis is inflammation of the cæcum or caput coli. It is rather more common than other forms of enteritis, especially after neglected constipation. **Peri-typhlitis** is a more obscure affection, differing, it seems, in involving a local or circumscribed peritoneal

inflammation with typhilitis. Pain, tenderness, swelling, and dull resonance on percussion, in the right iliac fossa, with constipation, are the symptoms. A number of cases which I have seen have all recovered. With more especial propriety than in most other cases of enteritis, opening the bowels, by enemata at least, and even by a mild laxative, as castor oil, is indicated. Rest, leeching, poulticing, and soft diet are the other main parts of the treatment.

Abscess may occur; with safe issue if it open outwardly, fatal if it rupture into the peritoneal cavity. Dr. Bull (N. Y. Med. Journ., Sept., 1873) advises early use of the *aspirator* in such cases.

PERITONITIS.

Inflammation of the peritoneum is one of the most dangerous of the phlegmasiæ, because of the extent and important connections of the membrane involved.

Varieties.—Simple or idiopathic; accidental or traumatic; tubercular; puerperal.

Causes.—Exposure to cold and wet; falls, blows, wounds, or other injuries; abscess of the liver; opening of aneurism, or perforation of gastric or intestinal ulcer (as in typhoid fever); tuberculization; the puerperal state.

Symptoms.—Diffused abdominal pain and tenderness, increased greatly even by *slight* movements, as breathing deeply or raising the lower limbs in bed; vomiting; constipation; tympanites; fever; with *very rapid*, though not full pulse. Later, that is, in three or four days, in violent cases, delirium, insomnia, collapse. Its course is usually rapid; from the incipient chill to the fatal end, often occupying less than a week, though sometimes two. Simple sporadic peritonitis, however, even in puerperal women, is, with careful treatment, much more often recovered from than not.

Diagnosis.—The most important point is the discrimination of "simple peritonitis or metro-peritonitis in the puerperal state" from puerperal fever. The main difficulty about this is that the latter disease *includes* peritonitis almost as constantly as erysipelas does diffusive inflammation of the skin. We can best discuss this differential diagnosis after considering the fever in question. (See *Puerperal Fever*.)

Morbid Anatomy.—After death from peritonitis, the swollen abdomen is found nearly always to contain fluid, often considerable in amount, serous, sero-sanguinolent, sero-purulent, or pus. The latter may form in a very few days; some facts have made it probable, even within forty-eight hours. *Adhesions* are present, with bands and false membranes of coagulable lymph, in various parts of the abdominal cavity; and redness, thickening, and opacity exist to a greater extent.

Treatment.—No disease requires or bears better the early use of the lancet than acute peritonitis. One free bleeding may sometimes, as it were, arrest the conflagration. Yet, apart from epidemic puerperal fever, in which bleeding has, upon the amplest trial, proved rather destructive than curative, there are cases in which the need of economy of material makes venesection unsafe.

Then leeching may be resorted to, in all but the very feeblest subjects. Fifty or a hundred American leeches may be borne upon the abdomen by a patient who would faint if the same amount of blood were taken rapidly from a vein. Exposure of the body, during leeching, may be, with care, avoided. Poulticing with flaxseed or Indian meal should follow the leeching; the poultices should be large, but light, and covered with oiled silk, or changed very frequently to maintain warmth. If no leeches have been used, flannel dipped in spirits of turpentine may be put all over the belly. Later, if the case threaten obstinacy, a large blister should be applied.

Of medicines, *opium* has now the general confidence of practitioners. Except emptying the rectum at first by mild enemata, no agitation of the bowels by medicine is to be encouraged. Calomel, as an *antiplastic*, has been long valued by physicians of sagacity and experience. Though unable to *prove* that it does lessen the tendency to the *effusion* of coagulable lymph, I bow to the rational empiricism which, not hastily, in time past, raised it to the position of reliance for that end. I am not satisfied that its utility as an antiphlogistic, especially in severe inflammations, has been disproved.[1]

With opium, then, I would, in peritonitis, give calomel: ½ grain to 1 grain of the former, with as much or less of the latter, every 2, 3, or 4 hours, according to the severity of the pain and the urgency of the case [F. 86, 87]. When the stage of debility comes on—or in very feeble cases from the first—quinine, instead of calomel, may be combined with opium; and support with beef-tea, and wine, brandy, or whisky, may be required.

When peritonitis follows an *injury*, the treatment may necessarily have to be modified by the concomitant states of other organs involved, or by the general shock of the system. So, also, when perforation of an ulcer of the stomach or bowel, or the rupture of an hepatic or other abscess or aneurism, brings it on—*collapse* is apt to occur speedily, forbidding any except anodyne and supporting treatment, and affording very little hope under that. Such cases are almost invariably fatal.

Chronic peritonitis is sometimes met with. When not tuberculous, although a very serious affection, it may be recovered from; the tubercular form, not with any more probability than pulmonary phthisis.

Chronic peritonitis should be treated by rest in the recumbent posture (in tedious cases the patient may be *carried* out into the sunshine and air), and resolvent and counter-irritant local applications; as repeated blisters, tincture of iodine, mercurial ointment, cerate of carbonate of lead. The latter, as a local sedative, I have sometimes found to have remarkable power. It may be prepared by adding ʒij of carbonate of lead to ʒj of fresh simple cerate [F. 88].

[1] Prof. John Marshall, of University College, London, has recommended the local application, for persistent inflammations, of the *oleate* of mercury with morphia; made by adding oxide of mercury to oleic acid, at 300° F., and afterwards adding morphia. It may be applied in warm or hot solution, with a brush or very soft sponge.

COLIC.

Varieties.—1. Flatulent. 2. Bilious. 3. Spasmodic, gouty, or rheumatic. 4. Lead colic. Some writers speak of *nephritic* colic; the pain of which is chiefly owing to the passage of small calculi, from the kidney to the ureter; while *neuralgia* of the bowels may also cause pain of similar seat to colic. *Uterine* colic, in females, may be either neuralgic, spasmodic, or obstructive (dysmenorrhœa).

Flatulent Colic.—This is caused by indigestion; as, from excess in the amount, or error in the quality of food; or, from cold and wet, arresting perspiration and disturbing the balance of the "aqueous visceral circulation," which is indispensable to normal digestion. Acrid *irritation* and gaseous distension produce irregular tonic or spasmodic contractions in the intestines; principally in the colon. They are not confined to this, however. In a woman with irreducible umbilical hernia, I have, during an attack of colic, felt a portion of small intestine, several inches in length, grow rigid during the access of pain, and relax when it was relieved. Sometimes the stomach itself is the seat of pain.

In flatulent or crapulent colic the abdomen is distended, but not very tender, except after long continuance of the attack. There is constipation of the bowels; often nausea, with belching of wind, sometimes vomiting; no fever. A sign of the yielding of the attack is audible or palpable rumbling of wind in the bowels; showing a return of the almost arrested peristaltic motion.

Bilious Colic.—The onset in this form is slower. Nausea is greater, and vomiting, of a greenish or yellowish (biliary) fluid, is nearly constant. The pain may last, with very slight remission, for a number of days. The bowels are constipated. There may be considerable fever, and some tenderness of the abdomen on pressure. Meteorism is generally present; but less in proportion to the pain than in flatulent colic. In protracted cases, slight or moderate jaundice is quite common.

The greatest suffering in cases of bilious colic is attendant upon the passage of gall-stones from the gall-bladder to the duodenum. Then, the pain is chiefly in the right hypochondriac and lower part of the epigastric region; and sudden relief follows the escape of the calculus from the *ductus choledochus* into the intestinal canal. In other cases, we suppose that the irritant which gives rise to spasmodic pain is acrid, unhealthy bile; which escapes into the intestines, and also, through the pylorus, into the stomach. Of course it is quite possible for the same condition of the stomach or intestinal canal which attends flatulent colic to coexist with hepatic derangement, without bile being a direct cause of local irritation.

Certain persons are particularly liable to such attacks; a large majority of people, indeed, are never subject to them. I have known, in a number of instances, the same patient to have severe bilious colic once in every two or three weeks; in others, the interval may be of months or years. In one case, under my care, the attack was fatal. Autopsy then showed rupture of the gall-

duct, under distension from obstruction by an impacted calculus. This must be very unusual. But prolonged bilious colic is never quite free from danger of inflammation of the bowels, or, in feeble persons, exhaustion from continued suffering and inanition.

Gouty Spasmodic Colic.—In the "gouty diathesis," this is one mode in which the disease may invade internal organs. The stomach is the most frequent and dangerous seat of it; the attack being commonly called "cramp in the stomach." It is characterized by suddenness, extreme severity of pain, and tendency to coldness and general prostration of the system. Repulsion of gout from the foot, as by cold applications, may bring it on.

Lead Colic; *Painter's Colic; Colica Pictonum.*—This disease has long been known as the result of exposure to the poisonous influence of lead. The name of "dry belly-ache" has also been applied to it. The abdomen is *shrunken* and rather hard; sometimes *knots* of contracted intestine may be felt. There is no tenderness, the pain being lessened or relieved by pressure. The suffering is often extreme, with restlessness; the face and body being thrown into grotesque contortions. Sometimes delirium occurs. Constipation is obstinate; the fæces, when passed, are small, dry, and hard. No fever exists. There is (Burton) a blue line along the edge of the gums. Malassez[1] ascertained that lead-poisoning is attended by a diminution in the number, and increase in the size, of the red corpuscles of the blood. Lead palsy may attend or follow colic. Amaurosis may supervene in protracted cases; ascribed, on ophthalmoscopic evidence, to *optic neuritis*.[2]

Treatment.—In all forms of colic, the indications in common are, 1, to open the bowels; 2, to relieve pain and spasm; 3, to prevent inflammation; 4, to prevent future attacks.

In **flatulent** colic we should ascertain if the stomach has just been overloaded, or any very unwholesome food has been taken. If so, a prompt emetic will be proper; as, a teaspoonful of mustard, or a tablespoonful of salt, in a teacupful of warm water—repeated in ten minutes if necessary. Then the antacid laxative, magnesia, may be given; a teaspoonful, with ten to twenty drops of essence of ginger, or ten drops of essence of peppermint, five or six drops of oil of cajuput, or some other aromatic in corresponding proportion [F. 89]. If the bowels are not opened, or relief of the pain not obtained, no great length of time must elapse without an enema of castor oil, salt and molasses, or soap, in warm water.

Should the stomach be much unsettled, and the pain violent, we may depend upon the immediate use of an injection to open the bowels; and may give by the mouth antacids and carminatives. Thus aromatic spirit of ammonia, spirits of camphor, compound spirit of lavender, or oil of cajuput may be given, with bicarbonate of sodium [F. 90]. Small doses every few minutes will be better retained than larger ones at long intervals, and will act better.

Anodynes come next in order. Extreme and sudden cases of colic, belonging rather to the **spasmodic** variety, require them *at once*. Other cases, the majority, are better managed by commencing with *corrective* remedies as above mentioned. When relief is not obtained without, we must give opium, chloroform, ether, or Hoffmann's anodyne [F. 91]. The first is of all the most certain, although chloroform, internally used, in ¼ drachm to ½ drachm doses, has not disappointed me.[1] Paregoric is a very good opiate for the same purpose. Pills of opium (especially *old* pills) may do better sometimes, where as much as a grain at once may be needed for severe pain. The "chloroform paregoric" [F. 92, 93] combines several good antispasmodics conveniently. Laudanum is the oldest stand-by, and well deserves its place.[2] Hydrate of chloral is relatively less valuable in giving relief from pain than in producing sleep.

[1] Le Mouvement Medical, 1873.
[2] J. H. Hutchinson, Phil. Med. Times, Jan. 17, 1874.

It is remarkable how much opium a sufferer with great pain will sometimes bear without narcotism. I have known a teaspoonful of laudanum to be taken at once; not even drowsiness following it. But care must be taken not to overdo this, or to give any more than is really necessary, or the remedy may possibly prove worse than the disease.

An important part of the treatment of colic is the use of warm external applications. Mustard should come first; a large sinapism, half and half with flour (if the mustard be of good strength) and covered with gauze or thin muslin, over the abdomen. When it is removed after making a decided impression, let a little lard, sweet oil, or cold cream be rubbed on, to prevent further irritation of the skin. A concentrated liquid preparation of mustard has lately been in use.[3] Then apply a hot flannel, dry or wrung out of hot whisky and water. For the latter the best mode is to add to very hot water an equal quantity of raw whisky. Such appliances should be often *renewed*, or they grow cold. Some persons have a tin vessel constructed to hold hot water, and shaped so as to fit over the abdomen. This is very good, if it can be used without its weight causing too much pressure. The feet of the patient should be kept warm; if he is able to sit up, or recline with the legs over the side of the bed, a hot mustard foot-bath will be suitable.

Fig. 73.

Gall stones.

Kneading the abdomen gently with the hand will aid to dispel flatus; but it requires tact not to make it too violent an operation. In every case of severe colic the possibility of *hernia* must

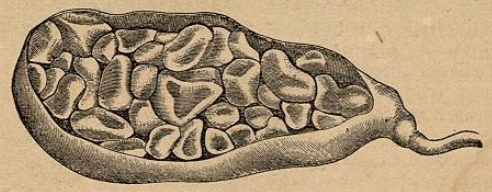
[1] A good way of preparing chloroform for internal use, is to dissolve it carefully in glycerin, one part to three of the latter. If, after standing 24 hours, any of the chloroform settles, it should be separated, and dissolved in an additional portion of glycerin. This preparation may be dissolved without precipitation in any quantity of water. However given, chloroform requires to be considerably diluted for internal administration.

[2] *Codeia* and *Narcein* are of late getting into use, to some extent, instead of opium and morphia. Their effects are said to be less unpleasant. Dr. Da Costa, however, after a careful trial of narcein, asserts its comparative inertness.—*Penna. Hosp. Reports*, 1868, p. 189.

[3] Crew, of Philadelphia, prepares *ready-made* sinapisms, which require, for use, merely to be immersed a few moments in warm water.

be held in mind, and its presence or absence should be ascertained.

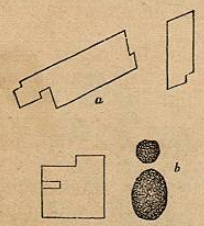
Fig. 74.



Calculi in the gall-bladder.

Infants are especially liable to crapulent colic; some during their first year having almost daily or nightly attacks. Very simple treatment will often suffice for these; in children, too, overmedication should be even more sedulously avoided than in adults. For infantile colic of slight severity, peppermint water, or infusion of fennel seed, will frequently be enough, with the application of a warm flannel over the stomach. Worse cases may be treated with lac assafœtidæ [F. 98], which children generally take well, if it be sweetened, in teaspoonful, or for very young infants half teaspoonful, doses. Antacids, as bicarbonate of sodium, will assist in giving relief [F. 94]. Keeping the bowels regular, never allowing a day to pass without an evacuation, is most important in young children. For this purpose the simple syrup of rhubarb, manna, and fluid extract of senna are the best medicines. The latter may give pain, but is less apt to do so if one drop of oil of cloves be added to each fluidounce. A *very small* quantity of *resina podophylli* added to syrup of rhubarb [F. 95] will make it more potent when the bowels are torpid. Glycerin may be occasionally substituted in teaspoonful doses.

Fig. 75.



Cholesterin tablets and glomeruli; from a gall-bladder.

When the food of an infant becomes acescent, lime-water may be added to it when it is taken, *e. g.*, a tablespoonful of lime-water in each pint of milk. Overfeeding an infant is a very common cause of colic.

Bilious colic may be attended by so inflammatory a condition as, in a person of full vigor, to demand early and moderate venesection. Opening the bowels is a cardinal indication in this as in the flatulent form. If the stomach will bear it, castor oil will be the most effectual cathartic. The least unpleasant way of taking this is in thorough admixture with spiced syrup of rhubarb; two tablespoonfuls of the latter with one of oil. Magnesia may be retained better than oil upon the stomach. Notwithstanding its effervescence, I have known the *citrate* of magnesium solution to

do very well in colic. The same *antacid*, *carminative*, and *anodyne* remedies, mentioned for crapulent colic, will be suitable in the bilious, and may require more persevering administration. So also enemata, mustard plasters, pediluvia, and warm applications to the abdomen are of great service. Besides these, however, a special indication exists for promoting healthy hepatic secretion,[1] so that it may be made less irritating and obstructive. The ordinary treatment then is, besides such palliatives as have been named, to give calomel, with opium, *e. g.*, ½ to 1 grain of calomel with about as much opium, every two, three, or four hours [F. 86]. Taraxacum, nitro-muriatic acid, and resina podophylli are all serviceable in some cases; but, except the podophyllum, they are scarcely prompt enough in their action during a severe attack. Leeches, cups, or, later, a blister over the liver, may be right, if hepatic or cystic inflammation threaten.

When there is strong reason to apprehend that the passage of a gall-stone is the cause of the severe pain, the warm bath, if practicable, will be useful by promoting relaxation, and full doses of opium may be called for by the patient's agony. Some prefer to inhale ether or nitrous oxide. Chloroform, taken internally, has been used with advantage by Dr. Buckler, of Baltimore. Possibly it may aid in dissolving biliary concretions, as well as by its anodyne power giving relief. *Choleate of sodium* has been advised for the former effect, by Prof. M. Schiff.[2] Its dose is about six or eight grains, twice daily.

Gouty, or other **cramp of the stomach**, generally needs very prompt treatment, essentially stimulant and antispasmodic or anodyne. In moderate cases, Warner's cordial (tinct. rhei et sennæ) has the advantage of being laxative as well as stimulating; from a teaspoonful to a tablespoonful may be given at once in *hot* water. Oil of cajuput, 4 or 5 drops on a lump of sugar, often gives immediate relief. In worse attacks, brandy, ether, laudanum, and Hoffmann's anodyne are more reliable [F. 97]; with a sinapism over the epigastrium, and a hot mustard foot-bath. Subsequent treatment, prophylactic of future attacks, as with colchicum or other medication, must be pointed out by the nature of each case.

Lead colic, when rapidly produced, may be treated antidotally, with sulphate of magnesium. If slowly brought on, we can do much less in that way; although it has been asserted that some chemical agents possess an eliminative power over lead combined with the tissues of the body. Alum is confided in by some, notwithstanding its astringency. Castor oil as a purgative, the warm bath to relax spasm, and opium to relieve spasm and pain, are the most important usual remedies in this affection. The costiveness being mainly spasmodic, it is not unfrequently found that, contrary to its common effect, opium promotes, in lead colic, the movement of the bowels. Iodide of potassium is believed to exert a decided power in removing from the system lead which has been

[1] Remarks are made elsewhere in this book upon the necessity of maintaining the validity of *clinical experience* with mercurials in affections of the liver, notwithstanding the result of some *vivisections*, announced by Dr. Bennett, as bearing upon the subject.

[2] L'Imparziale, No. 4, 1873.

slowly deposited in various organs. A milk diet is recommended in this affection.

Prevention of Crapulent and Bilious Colic.—This becomes the duty, if not the interest of the physician; when his patient has been relieved, to aid him in escaping returns of the disorder. To prevent the flatulent form, care in diet and regimen will ordinarily suffice. For the more serious attacks of bilious colic, to which certain persons are subject, prevention is attainable by the same means, along with especial attention to the *abdominal movements and secretions; i. e.*, the state of the liver and bowels. I am sure that I have enabled several persons, who for years had been liable to frequent attacks, to escape them altogether, by a very simple prescription, used upon the first threatening of any of the symptoms. Blue mass and rhubarb were here the sanative agents. A gentleman who has suffered terribly with bilious colic told me that twenty-grain doses of extract of taraxacum, taken once or twice, have repeatedly averted it with him. Flowers of sulphur, or *lac sulphuris*, given in teaspoonful doses or less, every day or two for several weeks, have answered the same purpose in another instance. But nothing has so signally satisfied me, as a prophylactic against periodical colic, and also, by a similar rationale, against *sick headache*, as the preparation above alluded to, which is as follows:—

℞.—Mass. ex. hydrarg. gr. v.
Pulv. rad. rhei et
Ext. gentian, āā ℈ss.
Ol. caryophyll. gtt. iv.—M.
Div. in pil. No. 20.

S.—One or two occasionally, as directed; to be continued if required, thrice daily for several days.

COMMON REMEDIES IN COLIC.

The following are put together simply as *memoranda*:—

Peppermint, Fennel, Cajuput; Lavender, Ginger; Aromatic spirit of ammonia; Bicarbonate of sodium; Magnesia; Castor oil; Warner's cordial; Olive oil; Camphor, Ether, Chloroform; Opium, in pill; Paregoric, or Laudanum; Hot flannel or plate; Assafœtida; Hot water; Brandy; Calomel; Enemata of oil, or Spirits of turpentine, or Laudanum; Sinapisms and Pediluvia; Kneading; Warm-bath.

Remember, always, the possibility of *strangulated hernia* as a cause of the symptoms of colic.

OBSTRUCTION OF THE BOWELS.

Few maladies present so striking a contrast as this, between the facility of pathological explanation after death and the obscurity of diagnosis and uncertainty of treatment during life.

Pathological Varieties.—Dr. Haven has well classified these as follows: I. Intermural: *a*, cancerous stricture; *b*, non-cancerous stricture, viz., 1, contraction of cicatrices from ulceration; 2, contraction of the wall of the intestine from inflammation; *c*, intussusception; *d*, the latter with polypi. II. Extramural: *a*, bands of adhesions from lymph; *b*, twists or displacements; *c*, diverticula; *d*, tumors or abscesses; *e*, mesocolic or mesenteric hernia; *f*, diaphragmatic; *g*, omental, and *h*, obturator hernia. III. Intramural: impacted fæces, calculi, coagula, curdled milk, etc.

Symptoms of Intestinal Obstruction.—These are, persistent constipation; constant vomiting, partly or altogether stercoraceous; coldness of the skin, prostration, distressed countenance (facies Hippocratica), collapse. Local evidences, rather more distinctive, are, hardness or swelling in one part of the bowels; arrest of enemata at a certain point, and of borborygmi (gaseous movements) in the same way. If the obstruction be high up, suppression of the urine occurs, with early vomiting. If it be low down, great meteoric distension and stercoraceous vomiting. When blood is passed from the bowels, with such symptoms, intussusception may be inferred. Sometimes an intussusception, beginning at the ileo-cæcal valve, may so progress as to bring the invaginated portion of intestine down as far as the anus; where it has even been known to be extruded. Death is apt to occur, from unrelieved obstruction, in from five to ten days.

But, at last, a *probable* diagnosis is sometimes all that the nature of the case will admit. The differential discernment of special forms of obstruction during life is usually impossible.

Treatment.—The simple, primary indication in persistent constipation with unrecognized cause, is *catharsis*. Castor oil, sulphate of magnesium, croton oil, are justifiably given, aided or seconded by enemata of the same or similar purgatives. When the diagnosis of *intestinal obstruction* has been well made out, no more cathartic medicines are to be given; the reliance then being upon nature and opium. *Belladonna* has been recommended (Gallicie), but not yet largely tried, under the same circumstances. The latter drug may be prescribed in grain or half-grain doses every few hours, to sustain a tranquillizing effect favorable to relaxation of the intestinal coats. Besides, we may try *large* enemata of warm water; or inserting a bougie; or a stomach-tube, to *catheterize* the bowel, as far as the ileo-cæcal valve; or, the Hippocratic remedy of large *air* injection, to distend and dislodge the intestine. Dr. R. Battey (*Atlanta Med. and Surg. Journal*, June, 1874) urges the persistent use of distensile enemata of from ten to twenty or more pints of water. Gustav Simon and Mosler also have advised the slow introduction of from five to nine pints of fluid at a time. This has succeeded in several cases of intussusception. Kneading the bowels gently while the patient is upon his hands and knees (Lambl, S. Rogers, Burrall), is sometimes successful. *Scybala* or impacted fæces, or coagula, etc., may be removed by a spoon or scoop from the rectum. *Galvanism* has sometims restored interrupted peristaltic action. Prolonged use of the warm-bath may be tried, to relax the system; and, as in strangulated hernia, the tobacco injection may be allowable as an extreme resort. On the other hand, M. Pyronac (*Gazette des Hôpiteaux*, 1871) reports the

recovery of a case under the application of *ice* to the abdomen, and injections of ice-water every quarter of an hour. M. Duplouy (*Gaz. Hebd.*, Feb. 1871) in a case of strangulated hernia, obtained relief by puncturing the intestine with a needle, and withdrawing the gas by means of a respiratory syringe. Other like successes have occurred, with Dieulafoy's aspirator. Annandale[1] recommends gastrotomy, in sudden and complete obstruction not relieved by ordinary treatment. He advises that the operation should not be delayed beyond thirty-six or forty-eight hours after the first symptoms appear; that the abdomen should be opened on the middle line, the best guide to the seat of obstruction being the contracted or dilated condition of a part of the intestine. If the bowel be gangrenous, or the obstruction not removable, the canal may be opened, and an artificial anus established.

J. Hutchinson[2] reports a successful case of gastrotomy (1873). When the colon is the seat of obstruction, Calliser, Amussat, Clement,[3] and others have shown that *colotomy* (in the right loin if the obstruction be above the rectum) is a justifiable operation. It is also least dangerous when not too long delayed. *Laparotomy* (instead of gastrotomy) is the term applied by some authors to abdominal section, as an exploratory, and, when possible, a remedial operation, especially for intussusception. Dr. J. Ashhurst has tabulated (*Am. Journal of Med. Sciences*, July, 1874) thirteen such operations for intussusception, with five recoveries; also, fifty-seven operations for other forms of intestinal obstruction, with eighteen recoveries.

CHOLERA MORBUS.

This very unscientific name has become inseparably attached to what, in technical phrase, may be most briefly called *idiopathic emeto-catharsis; i. e.*, vomiting and purging, neither brought on by irritant poison nor by epidemic influence. The account which I shall give applies best to such an affection as we commonly meet with in this country, especially in the summer. English medical writers describe it sometimes as English cholera; others, as sporadic cholera.

Symptoms.—Nausea, and vomiting of greenish or yellowish fluid, with rejection of all food and drink; often, but not always, pain in the stomach and bowels; diarrhœa, with brownish or yellowish stools; debility, and coldness; little or no fever. Beginning with such symptoms, if the attack, not relieved, becomes aggravated, cramps in the limbs supervene, the vomiting and purging become more watery; prostration and coldness deepen into collapse—which may be fatal.

Causation.—Warm weather seems to predispose to it, by relaxing the mucous membranes and exciting the liver. Direct causes often are, indigestible articles of food, as unripe fruit, etc.; excess of ordinary food; sudden change of temperature, checking perspiration.

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[1] Edin. Med. Journal, February, 1871.
[2] Med. Times and Gazette, Nov. 29, 1873.
[3] Medico-Chirurg. Transactions, vol. xxxv.

Diagnosis.—From epidemic chlolera, it is important to distinguish cholera morbus; as the prognosis is not the same, nor will the same treatment answer for both. The difference is seen in the *bilious* vomiting and purging of cholera morbus, and the *rice-water* discharges of cholera; the greater nausea in the former; much more tendency to collapse, with blueness, dyspnœa, and suppression of urine, in cholera. The presence or absence, at the time, of an epidemic of the latter may complete the diagnosis by confirming or correcting the evidence of the above signs. It is only in an extreme case of cholera morbus that any real difficulty should exist. During, and before and after, the prevalence of epidemic cholera, an especial tendency to cholera morbus, as well as diarrhœa, often exists. This, called *cholerine*, may present more near resemblance to malignant cholera than our ordinary summer attacks.

Treatment.—A large sinapism should be at once placed over the epigastrium. All theory or *rationale* apart, the following mixture is *admirably useful* in ordinary summer cholera morbus:

℞. Sp. ammon. aromat. f℥j.
Magnes. optim. ℥j.
Aquæ menthæ piperitæ, f℥iv.—M.
To be shaken when taken.
S.—A teaspoonful every twenty minutes.

Few cases will fail to be relieved in an hour or two, if this be given *early*.

When the diarrhœa is copious, or the case is seen rather late, paregoric may be added to the above— f℥ij or f℥ss, in the same mixture. When purging is very urgent and exhaustive, instead of magnesia a like amount of bicarbonate of sodium may be used. Infusion of cloves, cinnamon, or ginger, may assist to quiet the stomach in an obstinate case. After the sinapism, a spice poultice, of ginger, cloves, and cinnamon, each a full teaspoonful, with a tablespoonful of flour, moistened with whisky, should be applied. Ice may be given if thirst be great.

Extreme prostration may require the use of brandy or whisky internally. To check the diarrhœa and vomiting when threatening collapse, a laudanum and starch *enema* (40 to 60 drops of laudanum in ½ ounce of starch) may be given; and a blister may be applied over the stomach, the part to be dressed, when vesicated, with 2 grains of acetate of morphia mixed with 10 of powdered gum arabic; or the hypodermic injection of morphia may be used.

DIARRHŒA.

Though rather a symptom than a disease, excessive discharge from the bowels often requires express treatment for its relief.

Varieties.—These are, principally, 1. Irritative diarrhœa, as from dentition; 2. Inflammatory, as in enteritis; 3. Symptomatic, as in typhoid fever; 4. Critical, as at the close of remittent fever; 5. Eliminative, as in septic or other poisoning; 6. Colliquative, as in phthisis.

The character of the *discharges* varies very much. They may

be, 1. Fecal, although liquid; 2. Bilious; 3. Mucous; 4. Serous; 5. Adipose (very rare).

Except in the beginning of attacks, discharges are rarely fecal in character when much beyond the normal amount. The *gutter-water* discharges of typhoid fever often have nearly the fecal appearance except in consistence. *Mucous* discharges occur in enteritis, and in many cases of summer diarrhœa. *Bilious* passages occur in cholera morbus. *Serous*, or "rice-water," in malignant cholera.

Treatment.—An important point is, that in many cases diarrhœa ought not to be abruptly checked; in some it should not be interfered with at all. The latter is true of the looseness of the bowels in typhoid fever, if the passages are not more than three daily, and are but moderate in amount. When excessive, in that disease, they require checking, not arresting.

Ordinary summer diarrhœa, the most nearly "idiopathic" of all forms, demands *correctives*, generally, before or with astringents. Blue mass or hydrargyrum cum cretâ; magnesia, with charcoal or with aromatic syrup of rhubarb [F. 101]; bicarbonate of sodium, with ginger or cinnamon, etc., will often relieve the condition of the alimentary canal in which diarrhœa originates, and thus end it without the use of any astringents.

When the latter are indicated, by continuance or increase of the discharges, *chalk mixture* has long held a routine place as an early prescription. Instead of it some prefer *testa præparata* or *oculi cancrorum*. In infants, lime-water, with cinnamon or camphor-water, will do for mild cases. Kino, catechu, krameria, and hæmatoxylon are familiar as pure astringents. The addition of opium, or camphor, or both (as in paregoric) in small doses to such preparations is generally proper, to increase the binding effect, even in the absence of pain [F. 102, 103, 104].

Drs. Toner and J. J. Warner have recently (1873) called the attention of the profession to the experience of residents of California with the root of *Anemopsis Californica* (a low herbaceous perennial plant) as a remedy for diarrhœa. During infancy, Dr. Brakenridge[1] advises *oxide of zinc* for frequent diarrhœa; as a nervous tonic as well as a mild astringent medicine.

More obstinate cases should be treated with tannin (gr. iij in pill, with ¼ or ½ grain of opium, *pro re nata*), or pills of acetate of lead and opium (gr. j of the acetate, with gr. ½ of opium) every three or four hours; or a mixture containing acetate of lead with acetate of morphia; aided when necessary by enemata of laudanum and starch (30 to 60 drops of laudanum to ½ ounce of starch cool or cold). As an article of diet in feeble cases, arrowroot with brandy will be especially suitable.

In **chronic** diarrhœa, besides the remedies last mentioned, sometimes enemata of acetate of lead solution, or of some other mineral astringent, will do good. Mention of these will be again made in connection with *chronic dysentery*.

The *food* in cases of diarrhœa always requires regulation. Vegetables and fruits, as a rule, ought to be forbidden; the popular prejudice which makes the blackberry an exception I believe to be a mistake. It has had its origin in the known astringency of the *root*. Boiled rice, and other *farinacea*, will nearly always be suitable. In severe cases, all solid articles of food should be withheld.

[1] Med. Times and Gazette, Feb. 15, 1873.

Scorbutic diarrhœa, however, from the nature of its *cause*, demands a quite different regimen. Officers in the army who were affected with diarrhœa on the Chickahominy in McClellan's campaign, have told me that when astringents had no effect in checking the complaint, tomatoes, peaches, and lemonade cured it at once.

CHOLERA INFANTUM.

Popularly known as "*summer complaint*," this affection is very destructive to young children in the large cities of this country, in hot weather. The peculiar influence of high heat in an atmosphere contaminated by "town" causes, generates it. In New York and Philadelphia, its prevalence and mortality coincide with the rise of the thermometer above 90° F. in the shade. The deaths from all causes for the hottest week in July, 1866, in New York, were over 1200, and in Philadelphia over 700; more than occurred in a single week in either city during the prevalence of cholera later in the same season, and more than twice the usual mortality. In 1872, 1659 deaths from cholera infantum occurred in Philadelphia.

Symptoms.—These are, diarrhœa, vomiting, rejection of food, languor, debility, apathy; sometimes stupor. At first the head may be hot, the abdomen swollen; as the case progresses, coldness and emaciation supervene. In some, with predominance of cerebral symptoms, death may be threatened after a very few days of sickness. In others, copious diarrhœa and constant vomiting endanger the same result. In many, however, without violent symptoms, the child is gradually reduced by diarrhœa and inanition. The period of dentition is particularly liable to this disorder; it seldom occurs after four years of age.

Pathology.—Although decided alteration of the *follicles* of the intestines, with some change in the general appearance of the mucous membrane, has been shown to be generally present after death from cholera infantum, the disease is most probably rather a systemic than a local one. Its seat must be in the whole nutritive apparatus, including the ganglionic nerve-centres. Sanguification is evidently impaired, and an imperfect blood deranges the action of the brain and spinal cord; hence the stupor, or extreme apathy, and, in some bad cases, convulsions.

Treatment.—*Correctives* are, here, especially important in the beginning. I am, from considerable experience, a full believer in the great value of moderate doses of *calomel* in the early stages of summer complaint. I would always give it with an antacid [F. 107]. When stomach or head symptoms predominate, with but little diarrhœa, calomel with magnesia will do the best. When there is more looseness, bicarbonate of sodium should be used, with the calomel, instead. Spiced syrup of rhubarb may be added to either. Hydrargyrum cum cretâ is the preferred mercurial with many practitioners. I have found it to answer very well, after or even perhaps instead of calomel.