

forty, whence it happens that they are often confounded with cancer; there is no cachexia, and the symptoms continue for years. A bulging, variable in size, may often be observed above the level of the cricoid cartilage; this marks the position of the diverticulum within. The food accumulating here may, by the contraction of the cervical muscles or by the fingers of the patient, be dislodged and is then regurgitated. The sound enters the sac, but is not tightly embraced by it, as is a stricture, and moves about freely in the cavity. *Traction* diverticula are found low down, opposite the bifurcation of the trachea, and are caused by various inflammatory conditions leading to adhesion with the œsophagus. The traction thus caused induces the formation of diverticula.

DISEASES OF THE STOMACH.

CLINICAL EXAMINATION.

Position.—The examiner should remember that the stomach lies chiefly in the left hypochondrium—almost wholly to the left of the median line. It may be compared roughly to a chemists' glass retort—the stoppered orifice, the cardiac portion, and the end of the long tube, the pylorus. The left lobe of the liver covers the cardia as a rule, and hence the soreness developed by pressure is partly due to this circumstance.

When the stomach is dilated the fact can be ascertained by percussion, merely, in some few instances. Filling the organ by syphon with a known measure of fluid is, no doubt, a certain means of arriving at approximate results. The period when certain kinds of vomiting occur, and the amount and character of the vomited matters have high significance.

An examination of the vomited matters to detect the presence of bile, blood, an excess or diminution of acid constituents, etc., should not be neglected. With this object in view instructions to retain the vomit should always be given. The significance of the abnormal contents of the stomach will be found explained in their proper relations.

Forms and Varieties.—The diseases of the stomach are named according to their character and anatomical seat. Inflammation of the stomach is called gastritis, and may occur in the mucous membrane, or in the submucous connective tissue. The mucous variety is known as gastric catarrh, and then consists of two forms—acute and chronic; the submucous variety is designated phlegmonous or interstitial gastritis, and may also occur in two forms—acute and chronic; the latter

is sometimes called cirrhosis of the stomach. There is also a form of gastritis caused by the ingestion of corrosive and irritant poisons—toxic gastritis. Under the term *embaras gastrique* the French authors describe a light form of gastric catarrh, due to the use of various kinds of indigestible aliment. Severe cases of gastric catarrh, in which, in addition to the ordinary symptoms of indigestion, there is present fever, lasting about a week, have been called gastric fever. Chronic gastric catarrh is only another name for dyspepsia.

ACUTE GASTRITIS.

Causes.—The stomach is much affected by atmospherical changes. An illustration of this is afforded in the summer and autumnal attacks of bilious and gastric fevers, so called, induced as they are by the very considerable vicissitudes of temperature, the hot days and cool nights of the autumn. Gastric catarrh occurs at all ages after infancy, and is more frequent in men than in women. The most common causes are errors of diet, insufficient mastication of food, swallowing too hot or too cold liquids, excessive eating, abuse of ices, condiments, and sauces, etc., and especially of alcoholic drinks. Various external influences and moral causes affect the digestive functions, as occupation, exercise, sedentary habits, grief, etc.

Pathological Anatomy.—In the simplest cases, the lesions may be so slight as to escape detection; in mild but fully developed cases the changes are about as follows: The mucosa is the seat of a delicate injection occurring in isolated spots, arborescent or generalized to the whole membrane. Usually at or near the cardiac orifice, the injection or hyperæmia is most pronounced. The mucous membrane may be intensely engorged, and covered with a grayish, semi-transparent, and tenacious mucus (Orth). It should not be forgotten that enormous congestion of the stomach may exist in cases of mitral obstruction and regurgitation. The similarity of this to true catarrhal states is rendered the more confusing, because of the quantity of glairy and tenacious mucus found attached to the mucous membrane so firmly as to be washed off with difficulty (Wilks and Moxon). The mucous glands are prominent, and are increased in size above the normal, in consequence of the overgrowth of their contained cells and the hypertrophy of the adjacent connective tissue. In chronic cases, the glands have shrunk (atrophy), or have become cystic, in some situations, because of the pressure produced by the contracting connective tissue. Sometimes the mucous membrane is softened and easily stripped off; then again, it is indurated and much thickened, in consequence of interstitial inflammation. Much confusion has arisen in regard to the term "mamillated," which consists in the formation of numerous small, conical eminences, by the contraction of the sub-

mucous connective tissue, or of the muscular layer, similar to cutis anserina. This appearance can not be regarded as morbid, unless associated with other anatomical changes. Ecchymoses are found, and also dark, brownish patches, the result of subsequent changes in the effused blood. Erosions also occur here and there of various sizes, but not often of considerable size, and just about them the mucous membrane is softened. An œdematous appearance of the mucous membrane is caused by an infiltration by serum and sero-albumen of the submucous connective tissue. The proper secretion of the gastric glands is much affected by these anatomical alterations. The true gastric juice is no longer secreted, or its production is much lessened, and it is replaced by an alkaline fluid having no power of digestion.

Symptoms.—The initial morbid changes, doubtless, precede the occurrence of objective symptoms. At first, diminution of appetite, labored digestion, nocturnal restlessness, inability to undergo fatigue, supra-orbital headache increased by light, by noises, and by movements of the head, and sometimes accompanied by vertigo, are the symptoms experienced. In some instances, the vertigo is extreme; the patient may fall unconscious for a few seconds, and the vertiginous attacks may be confounded with symptoms of the same kind due to cerebral lesions. Pain is felt at the epigastrium, spontaneous or developed by pressure. The epigastric pain may have a boring character, as if passing through the body straight to the spinal column, or under the angle of the scapulæ. Pain is frequently felt in the left hypochondrium, two inches under the left nipple, or in the immediate vicinage of the apex-beat. The tongue is enlarged, marked laterally by the indentations of the teeth, and is covered over its whole extent with a whitish or a yellowish-white coating. The taste is perverted, indifferent, bitter, or putrid. Especially on rising in the morning is the mouth pasty, sticky, and filled with a bitter-tasting mucus. The appetite is totally lost (anorexia), and the thought of food-taking, especially the appearance of food, excites a sensation of disgust; but considerable thirst is experienced, and drinks, particularly those of an acid character, are eagerly sought after. Nausea is present in varying intensity, and there is usually vomiting, at first consisting of the alimentary substances, then viscid mucus acid and bitter, and finally bilious matters. Bilious vomiting is commonly supposed to indicate special disturbance in the hepatic function, but it really means that by the act of vomiting the gall-bladder is mechanically compressed, and its contents forced through the duodenum into the stomach. The amount of vomiting is usually determined by the amount of food previously taken. If the result of an indigestion, the vomiting is copious; but, under other circumstances, it may occur only occasionally, and then be slight. The sufferings of the patient are always aggravated by errors of diet, and vomiting is certainly provoked by eating

indigestible food. A foul odor of the breath, eructations of fetid gas, are due to a failure of digestion, and the occurrence of decompositions, the character of which, and the resulting products, being due to the kind of food undergoing this process. Saccharine and starchy foods become converted into carbonic and acetic acids; the fatty result in setting free irritating fat acids, and the substances containing sulphur and phosphorus give forth the highly fetid compounds of hydrogen—sulphuretted and phosphuretted hydrogen gases. Acidity and heartburn (pyrosis) are thus caused, and tympanitic distention of the stomach results from the setting free of a great quantity of carbonic-acid gas. The intestinal functions may or may not be disturbed. Usually there is present slight constipation; yet, if the attack is brought on by the use of indigestible aliment, more or less diarrhœa may occur, and it may be conservative. Mild cases of acute gastric catarrh may not excite the least disturbance in the heat-function, but in young and susceptible subjects there may be some feverishness, the movement being of a remittent type, the maximum temperature rarely exceeding 103° Fahr. When the stomach disturbance is extreme, and the fever persists for several days, the cases are sometimes entitled gastric fever, or they are confounded with remittent fever, especially in malarious regions.

Course and Duration.—The duration of acute catarrh of the stomach is four days to a week. A sudden and rapid cure is sometimes effected by a spontaneous or a forced evacuation, by vomiting, by purging, or by a urinary discharge. The beginning of convalescence is sometimes announced by an eruption of herpes, or by a profuse sweat.

Diagnosis.—Acute gastric catarrh with fever may be confounded with remittent and typhoid fever of the first week, but all doubts will disappear as these maladies develop. *Vertigo a stomacho laeso* (Trousseau) is to be distinguished from similar symptoms due to cerebral hyperæmia. The distinction rests on the age of the subject, the presence or absence of degenerative changes in the vessels, and of the arcus senilis, the history of stomachal troubles, the fugitive character of the symptoms, and the prompt disappearance of the stomach-disease when efficient treatment is instituted.

Treatment.—Simple cases of acute catarrh of the stomach need only abstinence and quiet. If the stomach is much embarrassed, and excesses of the table have been recently committed, or some specially irritating articles of diet have been consumed, free emesis is the most effective treatment. The salts of the metals belonging to the class of emetics are too irritating for this purpose. If vomiting have occurred, it may be encouraged by swallowing large draughts of warm water, which will act as a sedative if the stomach is empty. Weak alkaline mineral waters—as Congress, Hathorn, and Vichy of the Saratoga Springs,

and the French Vichy—should be drunk freely. Unhealthy and undigested aliment, which has reached the intestines, should be dislodged by saline laxatives. When there is much biliousness—so called—manifested by a heavily-coated tongue, vertigo, headache frontal and temporal, yellow skin, more or less constipation, urine high-colored, acid, scanty, etc., the mercurial purgatives are held to possess some special curative powers. This is probably true to a limited extent, not because of any action on the liver, but because they increase elimination from the excretory glands of the lower ilium. Podophyllin, iridin, euonymia, and ipecac, are nearly equally effective, but calomel in small doses (one twelfth of a grain) has remarkable sedative effects on an irritable stomach. The officinal effervescent powders, carbonic-acid water, milk, and lime-water, are excellent remedies to check vomiting. A mixture in equal parts of carbolic acid and iodine tincture, of which a drop may be taken, well diluted with water, every few hours, is a most valuable remedy to arrest abnormal fermentations and to check vomiting. A mixture of bismuth and carbolic acid with mucilage, in mint-water, is hardly less efficient. After the more acute symptoms have subsided, the tincture of nux-vomica and the diluted muriatic acid are suitable remedies to improve the tone of the stomach and to restore the appetite.

TOXIC GASTRITIS.

Causes.—As already defined, toxic gastritis is an acute inflammation of the stomach, caused by the ingestion of irritant and corrosive poisons.

Symptoms.—So far as the symptoms are concerned, there is no essential difference in the effects produced by the different irritant and corrosive poisons. Immediately on swallowing, there ensues a deadly nausea, rapid and uncontrollable vomiting, the matters rejected consisting of the contents of the stomach acted on by the poison, shreds of mucous membrane, altered blood-clots, etc. A diagnosis of the form and chemical characteristics of the poison may sometimes be made by observing the character of the stain of the face, lips, and mucous membrane—sulphuric acid causing a friable, blackish eschar; nitric acid a yellowish, leathery eschar; caustic potash spreading widely, softening, and liquefying the tissues. In the stomach, dark-brown, greenish, or black discolorations, with masses of sloughing mucous membrane, are observed. It is rare that the whole mucous membrane of the stomach is uniformly attacked. Usually there is considerable discoloration—uniform, indeed, about the cardia, at the greater curvature, and at the pylorus, leaving large portions untouched. Sometimes only the mucous membrane about the cardia and at the pylorus is attacked (Wilks and Moxon); the extent of the

action and the resulting appearances depend on the degree of concentration of the corrosive material. Sometimes the walls of the stomach are perforated, a result more frequently due to the action of alkalis than acids. The mineral poisons—arsenic, the salts of mercury, copper, zinc, nitrate of potash, etc.—produce an intense inflammation with vivid redness and injection. Carbolic acid acts superficially, and hardens and tans the mucous membrane.

Similar results follow the ingestion of certain kinds of food cooked in copper vessels and containing the acetate and other salts of copper, or articles of food that have undergone decomposition, such as sausages, hams, cheese, fish, etc. A violent gastro-enteritis is produced in a few minutes or hours after the swallowing of such aliments. Besides the local there are various systemic symptoms, produced by irritant poisons, either due to the diffusion of the poison or to the reflex disturbance resulting from violent local irritation. Besides the vomiting mentioned above as occurring immediately or very soon after swallowing the irritant, corrosive, or toxic substance, purging sets in, and the same sanies, detritus, and sloughs of the tissues discharged by vomiting pass also by stool. In the case of corrosive sublimate and the metallic salts generally there occur intense colic and tenesmus, and the discharges consist of mucus and blood, and strongly simulate dysentery. Whether or not diffusion of the poison or irritant takes place, there occur great anxiety and depression, a weak, rapid pulse, slow and shallow respiration, cold skin, covered with a cold sweat, retracted features, intense internal heat and thirst, burning in the gullet and fauces—the lips, tongue, cheeks, and fauces, charred, corroded, or softened by the contact of the poison.

Course, Duration, and Termination.—The characteristic feature of toxic gastritis is the suddenness with which symptoms arise, after swallowing some solution or eating certain articles of diet. Soon severe pains in the stomach, violent vomiting, and other symptoms occur, the patient having previously been in good health, it may be. Death may occur from the immediate effects of the poison, from the shock of the injury done to the organs, from the shock and subsequent perforation of the stomach, and peritonitis, combined. Recovery may ensue if the injury done is not too great for repair, the patient passing safely through the period of shock and collapse. The evidences of improvement consist in subsidence of the pain and vomiting, in returning tolerance to food which is bland and unirritating, in the disappearance of all the symptoms of collapse. Surviving the first injury, a fatal result may be subsequently due to the inflammation which follows. The convalescence is necessarily tedious, owing to the very limited surface capable of carrying on the function of digestion. Recovery is apt to be partial, and the nutrition ever after is feeble, owing to the extent of injury—the cicatrices and contraction

of the stomach, the stenoses of the orifices of this organ, and of the œsophagus.

Treatment.—Vomiting is to be encouraged by the free use of demulcent drinks. If the toxic agent consists of an acid, as speedily as possible weak alkalies, lime-water, soda, common soap, etc., should be administered. If the offending substance is a caustic alkali, weak acids, common vinegar, diluted acetic acid, etc., should be given. The various mineral salts require their appropriate antidotes: arsenic, dialyzed iron, or hydrated sesquioxide of iron; antimony, vegetable astringents, as green tea, galls, and oak-bark infusion; mercury and copper, albumen and mucilaginous substances; phosphorus, turpentine, magnesia, etc.; carbolic acid, saccharated lime. The stomach-pump should be used not only to remove the poison remaining, but to thoroughly wash out the stomach. To allay pain, and counteract the depression of the powers of life, no agent is comparable to the hypodermatic injection of morphia. Ice should be given freely, and an ice-bag applied to the epigastrium. The morphia must be repeated at regular intervals. No food should be given but a little cold milk at short intervals. Injections of defibrinated blood may be practiced with great advantage as a means of support. The subsequent management depends on the character of the poison, and the nature and extent of the injuries.

PHLEGMONOUS OR INTERSTITIAL GASTRITIS.

Definition.—By this term is meant an inflammation of the walls of the stomach, usually of the submucous layer, and resulting in the formation of an abscess, or in purulent infiltration of the parietes. These abscesses may be single or multiple.

Causes.—Phlegmonous gastritis may occur during the course of pyæmia, or be due to hæmorrhagic infarction or to hepatic obstruction. These abscesses may be acute or chronic.

Symptoms.—The symptomatology of phlegmonous gastritis is exceedingly obscure. The ordinary course is as follows: Usually suddenly, or after an irregular prodromal stage, the patient is seized with epigastric pain, followed by nausea and vomiting, thirst, a weak and irregular pulse, great distention of the abdomen, and diarrhœa. Profound prostration comes on, and finally a low delirium and death. These symptoms do not indicate the nature of the malady.

As it is doubtful whether such cases are ever recognized, the treatment must be conducted on general principles.

CHRONIC GASTRIC CATARRH.

Causes.—The chronic form may succeed to the acute. Heredity exercises an influence in its causation; not in the sense that the dis-

ease is directly transmitted, but the type of mucous membrane. Bad hygienic influences of every kind, especially miasmatic influences, and all manner of irregularities of life, are causative. The abuse of spirits, and the habitual consumption of highly-seasoned foods and of condiments and sauces, hasty and insufficient mastication, the frequent use of ices, and overfeeding, are the principal causes of chronic gastric catarrh.

Pathological Anatomy.—The most important changes occur about the pylorus. The evidences of previous hyperæmia exist in a brownish discoloration due to hæmorrhagic extravasation and subsequent changes in the hæmatin, and in more or less varicosity of the vessels. There is constantly present more or less hyperæmia, but not the intense and vivid injection seen in acute catarrh. The abnormal supply of blood to the submucous connective tissue leads to overgrowth (hyperplasia, hypertrophy), and this new material contracting, forces the glands into abnormal prominence, causing that appearance known as mammeloned; but it should not be forgotten that this appearance may be due to a contraction of the organic muscular fiber without the existence of any disease whatever. The gland-tubules also increase in size in consequence of overgrowth of their contents, and they produce a quantity of grayish or yellowish, thick, tenacious mucus, which covers closely and adheres to the surface of the mucous membrane. The overgrowth of connective tissue increases the thickness of the mucous membrane and its resistance to section. Compression of the tubules (glands), by the contracting connective tissue, induces atrophy of their cells. Here and there a gland is obstructed; its secretion having no outlet, accumulates, and a cyst is the ultimate result.

Symptoms.—When a chronic succeeds to an acute catarrh of the stomach, the attacks of the latter become increasingly frequent, and presently it is found that the patient is never free from uneasiness and other painful sensations referable to the stomach. This painful and otherwise disordered digestion is commonly known as dyspepsia.

When chronic catarrh exists the patient is rarely free from some disagreeable sensations, but it is after taking food, chiefly, that he experiences a feeling of weight or fullness, sometimes of pain; but acute pain of a lancinating character, especially when it seems to pass directly through to the back, is more frequently due to neuralgia—gastralgia—or is a symptom of ulcer or of cancer. On the other hand, attacks of neuralgia do sometimes occur in the course of chronic gastric catarrh; but the pain of the latter is more often a sense of soreness diffused over the epigastrium, the greater curvature, and is sometimes felt only in the left hypochondrium. Sometimes this pain may be relieved by pressure; but more usually pressure over the stomach, at any point, develops uneasiness, soreness, or pain. As the pit of the

stomach, so called (the triangular space under the xiphoid appendix), is occupied by the left lobe of the liver, and as the stomach lies well up in the left hypochondrium, these facts must be taken into consideration in coming to a conclusion in regard to the seat of pain. Sometimes when the stomach is empty, sometimes when it is full, the pain is greater; sometimes the pain is relieved by taking food, sometimes it is increased thereby. These idiosyncrasies give to each case a peculiar physiognomy. The subjective sense of fullness is confirmed by the objective swelling of the stomachal region. After meals, the discomfort caused by the distention is such that the mere pressure of the clothing gives rise to pain. This feeling of distention is due in part to an irritable state of the mucous membrane, but more especially to the formation of the gases of decomposition. In the normal state, the gastric juice has the power to prevent decomposition, or to arrest it after it has begun; but disease alters these conditions, and food in the stomach may pass through various kinds of fermentation according to its composition—the starchy and saccharine undergoing the acetic, and the fatty, the butyric fermentation. In hasty eating much air may be swallowed—the oxygen is absorbed, and nitrogen and carbonic-acid gas remain. Although formerly denied, it is now admitted that, under some circumstances, air is secreted by the mucous membrane—in certain states of the nervous system, especially. A small quantity of starch or sugar may produce a large volume of carbonic acid, causing great distention, and eructations of a sour liquid (pyrosis). Butyric acid induces a strong sense of heat and burning, gaseous eructations, often highly offensive from the presence of sulphur-compounds with hydrogen. Furthermore, gaseous distention of the stomach affects the muscular movements of the organ, so that the foods are not properly distributed and mixed with the gastric juice. In the regurgitations that ensue, particles of food are brought up, the nature of which is recognized by the patient; it may be acid, bitter, or merely mawkish. Again, by the distention of the stomach, the heart is pushed up and its actions hampered, and, through the intimate nervous communications, palpitation and intermittent pulse and a strongly accentuated second sound are produced. In consequence of the compression of the great venous trunks the return of blood from the head is impeded, and hence the face has a congested, red, and swollen appearance, and the head feels full, and headache and vertigo are present during the time the stomach digestion is going on. In some cases of chronic catarrh, vomiting of food occurs soon after it is swallowed. Later, if vomiting take place, the food is in various stages of digestion, and the vomited matters are highly offensive from the presence of butyric acid and the sulphur-compounds mentioned above. Sometimes the vomited matters will have a pasty or yeast-like appearance, due to the

presence of a peculiar fungus—from its fancied resemblance to a wool-pack called *sarcina ventriculi*. Vomiting is not constant nor regular, and in many cases occurs only when improper food has been taken. On the other hand, morning vomiting of toppers is a constant and ordinary condition in these subjects. As soon as they arise in the morning a feeling of qualmsiness comes on, and they strain a great deal to bring up some acid, glairy, tough mucus, or a quantity of rather thin, frothy, watery fluid mixed with air, and alkaline or neutral in reaction, and consisting chiefly of saliva swallowed during sleep. The appetite is usually diminished, or it may be capricious, and rarely excessive (bulimia). Usually but little food in the stomach develops a sense of satiety. Certain kinds of food, by the mere sight or remembrance of them, excite disgust and nausea; and, as a rule, the animal foods are disliked, and acid fruits and fresh vegetables are craved. The saliva is usually increased in amount; the tongue is pointed, red at the tip and edges, and the mucous membrane is glazed; the large papillæ at the base are swollen and tumefied, and there is present more or less follicular pharyngitis. The intestinal functions rarely continue undisturbed; constipation and flatulence are usually present, and the constipation alternates with diarrhœa. An extension of the catarrhal process from the duodenum to the ductus communis and the smaller ducts causes more or less swelling and obstruction and, consequently, jaundice. The nutrition of the body is impaired by chronic gastric catarrh; the strength is lessened, and the subcutaneous fat diminishes; the muscles lose in volume and decline in power, and the various functions are performed with less energy and efficiency. This depression in the functions is especially marked in the psychological sphere, where it manifests itself in melancholy and hypochondria, the patient being solely occupied with his own miseries, and especially with those sensations and feelings belonging to his own state. The peculiar troubles of this mental state are enhanced by the headache, the vertigo, and the other cerebral symptoms which accompany stomachal diseases.

Diagnosis.—The coexistence of the cerebral symptoms just mentioned with those of chronic gastric catarrh may greatly embarrass the diagnosis, but usually the differentiation may be made by reference to the history of the case, the extended duration of the gastric symptoms, which is incompatible with the fact of a cerebral malady, and the absence of concomitant evidences of disease of the nervous centers. Ulcer of the stomach may be confounded with chronic gastric catarrh, but the diagnosis may be made by attention to the following points: In ulcer, there is in front a fixed point of pain, posteriorly a corresponding painful spot; there is no diffused soreness; there is acute pain as well as soreness; the pain is aggravated by press-

ure, by the ingestion of solids and liquids, especially if hot or cold; there is vomiting of blood. In cancer, there is pain, acute or lancinating or burning, when the stomach is empty or full; vomiting of food, of glairy mucus tinged with blood, and vomiting of black blood; rapid and continuous emaciation; a peculiar icteroid, earthy hue; a tumor, hard or with nodosities; enlargement of external glands (the sub-clavicular).

Course and Duration.—The duration of chronic gastric catarrh is very variable; it may last months or years, now better, now worse, depending on the measures, or the neglect of them, employed for relief. Readily enough cured, if the patient will submit to the regimen necessary, it becomes exceedingly difficult if the causes which produced it continue in operation. Catarrh may terminate in ulcer, or it may lead to stenosis of the pylorus.

Treatment.—The treatment of chronic gastric catarrh due to hepatic obstruction, to valvular disease of the heart, and to albuminuria, belongs to the management of these diseases respectively, and need not be considered here.

Regulation of the diet is of the first consequence in all stomach diseases. All articles that disagree, whether owing to their nature or to idiosyncrasy, should be omitted. As acetic- and butyric-acid fermentations play so important a part in stomach derangements, it is highly important to exclude from the diet those substances the decomposition of which results in the formation of these acids. These articles of diet are the saccharine, the starchy, and the fatty. The mucus acts as a ferment, and these decomposing substances enact the same rôle, so that, when the starches, sugars, and fats reach the stomach, the fermentation begins. To exclude these articles, then, is the first step toward a cure. In lieu of these components of the diet, so important to most persons, the succulent vegetables, as lettuce, celery, spinach, cauliflower, tomatoes, etc., should be substituted. The materials for continuing the fermentations, consisting of mucus and the remains of previous fermentation, must be removed from the cavity if a continuance of the disorder is to be prevented. This can be accomplished in several ways: by the use of an absolute diet until the organ has freed itself of its decomposing contents; by the administration of emetics and laxatives; by washing out the organ with the stomach-pump; and, lastly, by the employment of certain medicines. A curative measure of the highest importance is the "skim-milk cure." This consists in the exclusive use of milk for food until the stomach is freed from the materials of fermentation, and has had sufficient rest to recover. The milk is taken in the quantity of four ounces (about) every three hours, day and night, when awake, and for a period of time determined by the cessation of the symptoms for which it was prescribed.

During this time nothing whatever is swallowed, except a laxative to relieve the constipation, or medicine for other purposes; but no medicines should be administered during a course of the milk-cure, unless imperatively demanded. When, after a few weeks, or a month or two, the symptoms of gastric catarrh have subsided, then some additions to the diet may be made, very gradually, consisting at first of a little stale white bread, then rice, then a soft-boiled egg, and so on, gradually, until a suitable diet is constructed.

An emetic, occasionally, is highly useful to empty the stomach of decomposing materials, and to prepare a clean surface for the action of medicaments. Saline laxatives may be employed for the same purpose. An occasional Seidlitz powder; now and then a drachm or two of Epsom salts in the early morning, or the Saratoga waters, or Püllna, or Friedrichshall, etc., are appropriate for this purpose. When there is much biliary derangement, phosphate of soda is highly serviceable. Still more effective for cleansing the stomach is the stomach-pump, or the fountain-syringe used as a siphon. With this instrument the cavity may be thoroughly washed out with tepid water, solution of common salt, solution of potassic chlorate, solution of salicylic acid, etc. As the effects are mechanical, chiefly, and are due to mere washing of the mucous membrane, it usually suffices to employ warm water. In severe cases the irrigation of the stomach may be practiced daily. This manœuvre is readily executed by the use of Debove's tube—a flexible rubber tube about five feet in length, three eighths of an inch in diameter, and having an expanded bell-shaped orifice, into which, as into a funnel, fluids can be poured. This tube has a distinct mark, nineteen inches from its distal extremity, to indicate the distance from the teeth to the cavity of the stomach. As the tube is passed into the œsophagus, the patient is told to swallow repeatedly. When the stomach is reached the fluid intended for irrigation is poured into the tube, the orifice held well up until the organ is full, when the tube is turned downward and made to act as a siphon.

Arsenic is a remedy of the first importance in the treatment of catarrh of the stomach. It is best administered in the form of Fowler's solution, one or two drops three times a day before meals, and it should be continued for a month or more. Next to arsenic, the oxide of silver is to be commended, in pill form, one half to one grain, three times a day, also administered on an empty stomach; but, as argyria may follow its prolonged use, it should not be given for a longer time than one month. When there is much acidity, it may be checked by the mineral acids, notably the muriatic, given before meals. This practice is based on the principle that acids before meals prevent the outward diffusion of those constituents of the blood which contribute to form