

CHAPTER VII.

DISEASES OF THE DIGESTIVE SYSTEM.—Section I.

Contents.—Stomatitis (*various forms*)—Inflammations of the throat—Tonsillitis—Diseases of the œsophagus—*Dyspepsia*, including the forms: *simple acute, atonic, and nervous; acute gastric catarrh; chronic gastric catarrh (irritable, oxaluric, and hepatic)*—Gastric ulcer—Cancer of the stomach—Dilatation—Acute (toxic) gastritis—Gastralgia—Anorexia nervosa—Enteroptosis—*Differential diagnosis of diseases of the stomach*—Hæmatemesis.

Stomatitis.—There are various forms of inflammation of the mouth. *Simple stomatitis* may be caused by local irritants, or it may be due to extension of catarrhal inflammation from the adjacent mucous membranes. The *follicular* or *aphthous* form is very common in children, and it consists of a fibrinous exudation of a grey-yellow colour. These may, at first, be only the size of a pin-head, but often they run together and form patches which ulcerate and afterwards cicatrise. This form is associated with frequent and acid stools, and with derangement of the digestive organs. The *ulcerative form* is common in the strumous child, especially when the hygienic surroundings are bad. The parasitic form—*muguet* or *thrush*—is due to the presence of the vegetative growth—*oidium albicans*; but nearly all forms of stomatitis are believed to be due to micro-organisms. Thrush gives rise to large white and curdy-looking patches upon the mucous membrane of the mouth, tongue, palate, and lips. In this form there is vomiting and diarrhoea. The patient becomes anæmic and emaciated; and cerebral symptoms, in severe cases, may supervene (spurious hydrocephalus). The *gangrenous form* or *cancrum oris* is a very severe type of inflammation which may destroy the whole cheek, and the necrosis may extend to the jaws. Mercury, in continued overdoses, produces an inflammation of the mouth and gums.

In all forms of stomatitis there is at first heat and dryness of the mouth, with pain. The pain is increased when acid or sweet substances come in contact with the erosions or ulcers. The secretions soon become increased, and the breath becomes fetid. In the severe ulcerative and parasitic forms, and especially in the gangrenous stomatitis, the symptoms are often intense and of an adynamic type.

In the diagnosis syphilis and diphtheria require to be remembered. *Pemphigus* sometimes begins in the mouth.

The treatment depends upon the form. Simple stomatitis is best

cured by regulating the diet—avoiding acids and sweets for a time. Milk with lime water, or with a pinch of bicarbonate of soda, is best for infants. The same line of treatment is indicated in the ulcerative forms. Chlorate of potash—a teaspoonful to a tumbler of warm water, to which a teaspoonful of glycerine may be added—is a useful gargle or mouth wash. A little may be swallowed. Borax and honey, as a local application, is useful for infants. The ulcers may be touched with caustic or blue stone. In the parasitic form R 32 should be used. The gastric derangement may best be treated with bismuth and soda, R 33. In the mercurial stomatitis iodide of potassium is indicated. The gangrenous form requires prompt surgical aid.

Glossitis, or inflammation of the tongue, is discussed in surgical works. Secondary swelling, due to obstruction of the salivary duct by a calculus; buccal urticaria; gummata; cancer; and hypertrophy of the tongue—should be noted in the differential diagnosis.

Inflammations of the Throat—*Simple acute sore throat* is generally the result of cold; but it may be *diathetic* (gout, struma, or rheumatism) or *toxic* (alcoholism, products of faulty digestive organs, belladonna, &c.). The acute septic inflammation, due to organisms, includes the *ulcerated throats* (“hospital,” “drain” throat, and purulent cellulitis of the neck—*angina Ludovici*). The *leptothrix* fungus, present in concretions of tartar around the teeth, sometimes gives rise to milk-like patches. In acute inflammation the pharyngeal mucous membrane becomes red and swollen, and the follicles often project and are enlarged (*follicular sore throat*). The tonsils are swollen and red, and the orifices of the Eustachian tubes may be affected. Glairy mucus lies upon the mucous membranes, and hæmorrhagic extravasations are often present. Ulceration often occurs during the acute stage.

When the sore throat is *chronic*, there is less redness and swelling, but the veins are seen to be tortuous and the follicles prominent. Superficial ulcerations and erosions form, and the mucous secretion contains pus, and blood occasionally. The palate is relaxed, often on one side, and the acute attack often leaves the *relaxed throat*. A relaxed sore throat may, however, arise without any acute symptoms. The *herpetic* form of sore throat is characterised by a vesicular eruption, usually affecting the tonsils. The chronic ulcerated throat may follow the acute—syphilis and scrofula being often the constitutional diseases producing these.

The symptoms of sore throat are too familiar to need much description. They are all associated with general *malaise*, headache, and symptoms of “cold in the head,” with the appearances just described. Pain in the ears is commonly present when the Eustachian tubes are affected. In the chronic forms, “hawking” becomes a disagreeable habit.

Tonsillitis is infectious, and is microbic in its origin. The inflammation may be superficial, and may be followed quickly by

ulceration; or it may affect the connective tissue (peritonsillitis) or the deeper structures (interstitial tonsillitis)—the two latter forms commonly ending in suppuration.

There is intense hyperæmia of the tonsils, extending to the palate and uvula. The tonsils may be so swollen as almost to meet in the middle line. The secretion of mucus is increased, and it soon becomes muco-purulent. When pus forms, it tends to burrow down, and into the pillars of the fauces.

The symptoms are at first those of an ordinary "cold or chill," followed soon by heat, constriction at the throat, and pain on swallowing. The temperature rises to 102° or 103° F. The breath is foetid, and the tongue heavily coated. Pain shooting up to the ear is common, and it is often associated with noises in the ear and temporary deafness, due to the pressure upon the Eustachian tubes. The voice has a muffled tone, and the breathing is affected, especially if there should be much œdema of the surrounding parts. In inflammation of the deeper structures, the tonsillitis is usually unilateral, and the parts have a hard, brawny feel. Rigors indicate suppuration, and there is danger of the pus burrowing down beneath the aryteno-epiglottic folds, and the possibility of œdema glottidis supervening. *Fluctuation* may be made out with the finger. In severe tonsillitis, the glands of the neck enlarge and are very tender.

The *chronic* form of tonsillitis is generally a manifestation of the stumous diathesis, and less frequently the result of acute attacks. Cold is generally the cause of acute tonsillitis. Chronic hypertrophy of the tonsils, with frequent subacute attacks of inflammation, is a very common condition met with in practice, and in early youth is generally associated with *adenoid* vegetations (post-nasal growths). Tonsillar affections are more common in youth. The *duration* of acute tonsillitis is about a week or ten days. Rapid recovery is the rule after free exit of the pus.

[*Retro-pharyngeal abscess* may be the result of inflammation of the loose connective tissue, but more usually it is caused by disease of the cervical vertebræ, or by suppuration of the deep lymphatic glands, extending to the pharynx. There is fever in the first case, and then a hard swelling may be made out, with pharyngeal obstruction. The latter symptom, with stiffness of the head, may be the first symptom calling attention to the abscess, when it is secondary. There is danger to life if not evacuated.]

In relation to the *diagnosis* of sore throats, generally, the scarlatinal pharyngitis and syphilitic ulcerations have to be remembered. *Simple sore throats* are frequently accompanied by red rashes, especially in children. Diphtheria requires to be noted, and the superficial form of tonsillitis with "diphtheritic" looking ulceration, requires to be carefully differentiated. The *ulceration* in the superficial tonsillitis is more limited to the tonsils (see *Diphtheria*). Ordinary sore throats often accompany fevers, and inflammations of the air-passages and lungs; but as the symptoms of the latter are sometimes latent, a sore throat and cough should always suggest an examination for them.

The Treatment of Inflammations and Ulcerations of the Throat.—The simple acute forms have been considered with the treatment of general catarrh (see *Coryza*). Rheumatism and gouty cases require salicin, colchicum, &c. *Quinine* should be given, in five grain doses, every fourth hour, in acute tonsillitis, with much fever. Warm gargles of hot milk and water may be ordered; but sometimes ice, and cold gargles, give most relief. After suppuration the tonsils should be incised.

The chronic sore throats are best treated by astringent and alkaline gargles and douches. An alkaline lotion—*strength*, five grains of carbonate of sodium to an ounce of water—is useful to remove mucus. Sulphate of zinc, sulphate of copper, or nitrate of silver—*strength*, one grain to the ounce of water—are all used as astringent gargles. Glycerine with tannin is also much used, and it may be painted on with a brush. The ulcerated sore throats require gargles of chlorate of potash, or of Condy's fluid. R 32 may be used as a local application, or boroglyceride—the latter especially when the patient is too young to gargle. Iron should be prescribed during convalescence. The galvano-cautery should be applied to enlarged lymphoid follicles. Burroughs and Wellcome's atomizer is a useful instrument for the application of ointments and vapours to the throat and nose. *Paroleine*, used in this way, is said to be efficacious in the chronic relaxed forms of sore throat with much hawking of mucus.

The *œsophageal diseases* may conveniently be grouped, as pain and difficulty in swallowing (dysphagia) are common to them all. An *œsophagitis* may result from extension of inflammation from the mouth or stomach; but more frequently it is caused by the swallowing of irritant and corrosive substances. *Stenosis* of the œsophagus may arise, as a secondary condition, the result of cicatrization of the mucous membrane. More frequently, stenosis is caused by compression, as by aneurisms and tumours, enlarged thyroid, or deep lymphatic glands. Oftenest of all, it is the result of pressure by cancerous developments. Fibroid polypi, parasites, and foreign bodies may also cause stenosis; and it may also be purely *spasmodic*—without any organic lesion. Dilatation of the œsophagus from a weakening of the walls (fatty degeneration), and diverticula, usually produced by the lodging of foreign bodies within the tube—are frequently met with.

An intelligent and cautious use of the œsophageal bougie will serve to locate obstructions and differentiate stenosis from dilatation. The obstructions are usually at the lower third of the œsophagus. Regurgitation of the food is a common symptom of obstructive disease of the œsophagus, especially when the lesion is severe and localised. *Auscultation* reveals the normal œsophageal sound as suddenly arrested, and gurgling and sputtering sounds with the commencement of regurgitation. Hunger and thirst, with gradual emaciation, are symptoms common to all obstructions of the œsophagus. Cough and dyspnœa are often caused in the attempts to take food.

The diagnosis of stenosis is not difficult, but to trace its cause is sometimes not so easy. Hysterical and hypochondriacal dysphagia have to be remembered, and usually the symptoms in such cases are not so urgent, and there is not such emaciation. Dysphagia may also be the result of paralysis of the palate (see *Diphtheria*). The history of the case (scalds, burns, &c.), and the presence or absence of the cancerous cachexia are important points. The signs of aneurism, mediastinal or cervical tumours, enlarged thyroid or lymphatic glands, have all to be looked for, confirmed, or excluded.

The X-Röntgen rays may be of service in demonstrating the presence of foreign bodies, &c.

The prognosis in organic obstruction is usually very grave; but simple cicatrizations are sometimes relieved by systematic dilatation.

The treatment of œsophagitis is to give bland food. In the obstructions the treatment can only be palliative, or surgical interference may benefit the case. Neural sedatives may be given in spasmodic cases. Dilatation with bougies is practised in the simple forms.

Dyspepsia.—Dyspepsia consists of a disturbance of the normal chemical and vital changes concerned in the act of digestion. It is a functional disorder, and it may exist as an independent affection, or it may be the result of acute or catarrhal inflammation of the stomach. It is often present as a secondary consequence of disease affecting other organs of the body; and it may be due to debility after fevers and exhaustive diseases.

The pathology of dyspepsia is often obscure. It appears to be sometimes the acid and sometimes the ferment of the gastric juice, which is at fault; but the proper mastication of the food, the nature of the food itself, and the action of the salivary glands, liver, and pancreas, have all to be considered in the diagnosis and treatment of a case of dyspepsia. These can only be understood by a thorough knowledge of the act of digestion (see Landois and Stirling's *Physiology*. For chemical tests see *Appendix*.)

There are various forms of dyspepsia described, and these will be taken in order, although in practice they are not so sharply defined, and frequently the forms are mixed.

Simple acute dyspepsia is generally sudden, and the result of error in diet. The ingestion of large quantities of fruit, such as grapes, figs, &c., will in most individuals produce a sensation of discomfort, which is soon followed by sickness and pain, and which generally ends in vomiting, with immediate relief. It is not always caused by fruit, but, indeed, the individual idiosyncrasies are too numerous to mention in detail, and "what is one man's food is often another man's poison." Experience, only, can teach one what he is to avoid. Similar symptoms may arise, and yet, apparently, there has been no self-indulgence, and the food has been wholesome enough. To persons of weak digestion naturally, unpleasant sights,

eating in haste, and active exercise immediately after a meal, may all excite an attack of acute dyspepsia with pain and vomiting. The more chronic state of dyspepsia generally results from long continued abuse of certain articles of diet, of which *tea* is a common example. *Gout* is also a very common cause.

Atonic dyspepsia may be subacute or chronic. It is the form associated with general debility or loss of tone, and it often arises from co-existing chronic disease. It is most common during convalescence from typhoid fever, and from other exhaustive diseases. The appetite is poor, and there is discomfort or pain shortly after eating. There is no thirst, as in the catarrhal type, and no vomiting, as a rule; but acidity, and sometimes nausea, with eructation and flatulence, are the prominent symptoms. Constipation sometimes exists; but diarrhoea is more frequent, especially when the ordinary diet is adhered to.

Nervous dyspepsia is a chronic form associated with the nervous diathesis. The appetite is often good, but frequently vitiated. Vomiting is common, and the pain and acidity are often great, and accompanied by the usual flatulence, water-brash, and nausea, common to the whole group. Gastralgia is common, and pain is often present before a meal, and is relieved by eating.

In the three preceding forms of dyspepsia, there are no symptoms of a catarrhal state of the mucous membrane. Thirst is absent, and generally there is no headache. The patient does not complain of a bad taste in the mouth. The tongue is pale and flabby, and it is not coated with fur, as in the following forms.

Acute catarrhal dyspepsia, or more commonly, acute gastric catarrh, is a very common disease. It is readily produced by over-indulgence in the pleasures of the table, by errors in diet, and by the excessive use of condiments and alcoholic stimulants.

Certain atmospherical conditions, especially during the summer and autumn, seem to favour its development; while feverish colds and other more serious disorders, often are accompanied or followed by gastric catarrh. The congestion of the stomach, which is associated with valvular disease of the heart, is a very common cause of this form of dyspepsia. The gouty and rheumatic diatheses are also favourable to its development.

The pathology is that of a simple congestion, and subacute inflammation of the mucous membrane of the stomach. This may affect the entire organ, or it may exist in patches—the cardiac end of the stomach being generally the most affected by the hyperæmia. The mucous glands are prominent, and in severe cases, there is much tenacious mucus lining the coats of the stomach. Superficial erosions and ulcers may also be present.

The symptoms begin with slight nausea, loss of appetite, and vertigo, with pain or discomfort in the epigastric region. There is often heartburn, acidity, flatulence, regurgitation, and vomiting—the latter giving temporary relief. The tongue becomes coated with white or brown fur, and it is dry and clammy. The patient com-

plaints of a bad taste in the mouth, especially in the morning. The breath is offensive. There is almost always great thirst, and severe frontal headache. The temperature rises one or two degrees. The bowels are confined; or diarrhoea may be present. The patient is much depressed and easily fatigued during the day, and at night he is often sleepless. In the aged the vertigo is often so great, and sometimes so sudden, as to simulate an apoplectic seizure. With proper treatment, recovery is the rule in about a week or ten days.

Chronic Gastric Catarrh.—The pathological conditions in the chronic form are more marked. The mucous membrane of the stomach may be indurated and much thickened; but sometimes it is much softened. The glands are either shrunken or have become cystic. Hæmorrhages and erosions are more marked, and the mucus is great in quantity and very tenaceous, and the membrane is of a *dirty slate-grey colour*.

The **symptoms** are similar to those of acute catarrh—only more variable and more chronic in character. The tongue is not so coated with fur, but it is red and cracked, and often flabby. The appetite is capricious. Various *clinical forms* are described, viz. :—

The Irritable.—The tongue is red, cracked, and painful; the appetite often keen, but easily satisfied, or the patient eats voraciously and overloads the stomach; thirst is always present. There is pain an hour or two after a meal, and great irritability of temper, with eructation, pyrosis, vomiting, and other symptoms common to indigestion. The bowels are generally loose.

The Oxaluric.—The patient has a sallow, worried, or hungry look; the tongue is pale and indented; the appetite is poor, and there is not much pain after eating. There is general *malaise* and great depression; the urine is acid, and there is excess of lime crystals deposited. There is not so much thirst in this form; and it is frequently associated with the nervous diathesis.

The Hepatic.—This is the “bilious” form or “sick headache.” The tongue is furred—usually more so at the back; and the circumvallate papillæ are enlarged. There is frontal headache, and often there is slight jaundice and vertigo, with “black specks floating before the eyes.” There is great thirst. The urine is loaded with urates, and there is diarrhoea usually—the stools being often hot and irritating—along with the other symptoms common to the whole group. More or less congestion of the liver co-exists with this form of gastric catarrh. When the liver is only slightly affected, the case is one of *hepatic dyspepsia*; but when there is marked jaundice, pain, and enlargement of the organ, with tenderness upon pressure, along with the foregoing symptoms, the two conditions may be diagnosed—*i.e.*, gastric catarrh, with congestion (and enlargement) of the liver. (See congestion of the liver.)

Ewald describes three forms of chronic gastric catarrh, viz. :—simple, mucus, and atrophic. Hydrochloric acid is diminished in the two first, and absent in the last—as also are the ferments. Fenwick describes a form—*primary atrophy*—associated with weakness and anæmia (see Diagnosis, p. 163).

The treatment of the different forms of dyspepsia and gastric

catarrh are here taken in order, but it should be noted that as the forms met with in practice are frequently mixed, so the treatment requires to be modified accordingly.

Acute dyspepsia, arising from error in diet, requires a prompt emetic. Mustard, or salt and water may be used. A dose of castor oil may be necessary, and twenty drops of laudanum may be given, to an adult, along with it—if there be griping pains. Draughts of hot water are useful, and the diet should be light and consist chiefly of milk for a few days.

Atonic dyspepsia requires a careful regulation of the diet from the first. The “milk cure” is useful to commence with in extreme cases, the diet being gradually strengthened as the digestive powers recover. The milk may be peptonised if necessary (R 34). Benger’s food is a highly useful preparation. Beef tea or Valentine’s beef juice may be added to the dietary; and in some cases, when milk does not agree, beef tea must be substituted. Chicken soup, boiled whiting, and chicken follow later. A well-cooked chop should be the first meat attempted; and gradually, as digestion improves, the patient resumes his ordinary diet. A glass of warm water one hour before dinner is useful. A little claret may be allowed at dinner, or very small doses of whisky and water may suit better, in the debilitated cases which seem to require a stimulant. The rule is to eat in small quantities at a time. A change of air is to be recommended, and gentle exercise. The following prescriptions may be used during the course of atonic dyspepsia. (R 35, 36, 37, 38.) The Byno-hypophosphites are very useful in feeble digestion.

Nervous dyspepsia is treated sometimes like the atonic form, and sometimes it requires the treatment of the catarrhal types. Morphia or opium may be necessary for the pain; but it should be carefully prescribed, in case of the patient contracting the opium habit. It is better to seek to improve the general condition by arsenic and iron preparations. It is needless, however, to prescribe these when gastric catarrh co-exists. First, therefore, treat the catarrh (see below), then prescribe one or other of the prescriptions given in the atonic form (R 36, 37). The saccharated carbonate of iron is a mild and useful chalybeate. Liquor arsenicalis may be given in three minim doses, thrice daily in water, immediately after meals. The latter is useful in gastralgia. Treat any reflex irritations, as ovarian disease, decayed teeth, worms, &c. The diet should be carefully regulated on the lines already given under atonic dyspepsia. Strong tea is to be avoided in this, and in all forms of dyspepsia.

Acute Gastric Catarrh.—If the stomach be overloaded, an emetic may be given, and draughts of hot water should be given immediately thereafter. A saline purgative is useful, or R 39 in acute cases, and no further treatment, beyond attention to the diet, may be necessary.

In those cases in which the onset is gradual, and the symptoms more lasting, bismuth, rhubarb, and soda should be given in small doses before food, as directed in R 40. If there should be excessive diarrhoea, the rhubarb should be diminished to one grain. An opium pill may be necessary.

Sometimes the hepatic symptoms predominate, and then the prescriptions given under *hepatic dyspepsia* are indicated. The diet should be light and digestible, consisting chiefly of milk, light milk puddings without eggs, rice and milk, and toast, beef tea, chicken, &c. R 36 or R 43 is useful later.

Chronic Gastric Catarrh.—The regulation of the diet is here again by far the most important consideration in the treatment. In severe cases, the "milk cure" should be tried for a lengthened period. Skim-milk—about eight ounces every three hours, day and night (when awake)—may be given and continued for a month, or longer, without any other article of diet. The stomach gets a complete rest. Washing out the stomach with the syphon tube is also good practice, if not continued too long (see *Dilatation of the Stomach*).

In cases of less severity, the diet may be regulated as indicated in atonic dyspepsia, all starchy, saccharine, and fatty foods being avoided. Lettuce, celery, spinach, cauliflower, and tomatoes may sometimes be allowed for these. In a month or two the diet may be strengthened, but during a course of such treatment, no medicine need be given, except an occasional aperient. In the milder forms of chronic catarrh, or during an exacerbation, R 40, containing bismuth, rhubarb, and soda may be ordered. The symptoms are very variable, and sometimes a chronic case will require at times very different treatment. Small doses of arsenic or silver (with the usual precautions) may be tried. Bismuth and charcoal is a useful combination for flatulence and acid fermentation. Bartholow recommends a drop of the tincture of iodine, with a drop of carbolic acid (*well diluted*) every few hours, as a remedy for abnormal fermentation and vomiting. When fairly well, a tonic (R 36 or R 43) may be prescribed. In the *irritable* form, bismuth and pepsine preparations are indicated for a time. Only bland food (milk chiefly, and barley water) should be allowed. R 41 is useful. An after-dinner pill (R 42) may be given in less acute cases. The *oxaluric* form requires the use of mineral acids, R 43 being the best. It is frequently associated with the *nervous diathesis*, and hence the treatment of that form of dyspepsia may also be indicated.

The *hepatic* form of dyspepsia, with sometimes considerable congestion and enlargement of the liver, is a very common condition. It is met with in varying states of mildness from the patient who complains of feeling "livery," or who has an acute gastric catarrh, with some symptoms referable to the liver—up to the severe type of the disease associated with chronic gastric catarrh.

The rapid, but mild form, may be relieved by a blue pill at night, followed by a Seidlitz powder in the morning. If associated with acute gastric catarrh, the treatment will be the same as indicated in that disease. If the liver symptoms be more prominent, calomel, iridin, euonymin, and podophyllin are proper remedies. Calomel is highly useful when the stomach is irritable. R 44—nitric acid and taraxacum—is very useful; and also the pill of mercury and rhubarb (R 45). Nitrohydrochloric acid is highly useful, and is much used (R 43). Draughts of weak alkaline waters are useful for thirst, and

to flush the tubules of the kidneys, and dilute the urine when clouded with urates. If the pain in the hepatic region be great, in consequence of the liver congestion and enlargement, turpentine stupe may be used, or mustard may be applied. It is important in these cases to relieve the portal system—and possibly the hæmorrhoids, which are so frequently present in liver affections—by gentle but efficient cathartics.

Gastric Ulcer.—In by far the greater proportion of cases the ulcer is solitary; but sometimes they are multiple, and they may coalesce. They are usually found on the posterior wall, the lesser curvature, and near the pylorus. The acute ulcers are round or oval in shape and about the size of a shilling piece. They have smooth edges at first; but when chronic, the edges become indurated in shelving layers, the point of the excavation reaching the muscular or even the peritoneal layer. Perforation may take place; and it is often only prevented by the thickened connective and granulation tissue. Cicatrisation of large ulcers near the pylorus may narrow the orifice and lead to dilatation of the stomach. Secondary adhesions to neighbouring organs, from local inflammation, are frequent; and sometimes communications are established between the stomach and colon; or an external fistulous opening may result. When perforation takes place, the contents of the stomach pass into the peritoneal cavity and set up general peritonitis.

The actual cause of a gastric ulcer is the blocking of an arterial terminal twig by a clot (embolus) cutting off the blood supply. Atheroma and endarteritis, by inducing thrombosis, are important factors in their production. Gastric ulcers are well known to be associated with the anæmic and puerperal states; while exhaustive diseases—as tuberculosis, &c.—favour their development. The disease is very common in young servant maids. Extensive burns of the chest and abdomen are known to be associated with ulceration of the duodenum, so that a *nervous* element must be considered a factor in the causation of ulcers.

The symptoms are generally of a chronic character, and for a time simple indigestion may be all that is suspected. Sometimes a sudden perforation takes place without there having been any previous symptoms to suggest the presence of an ulcer. Chronic dyspepsia with severe pains, sometimes referred to the side and front, and often shooting through to the back, are suggestive; and if there should be hæmatemesis or mæna, then a gastric ulcer may fairly be assumed, when the other conditions mentioned under the diagnosis, later, can be excluded. The vomited matter is well described, sometimes, as like hare soup or "coffee grounds," but at the end of the act pure blood is frequently brought up. The pain is often very violent, and burning or gnawing in character, and the patient can often indicate with a finger the exact spot of maximum intensity. During a paroxysm there may be great prostration or syncope, and even in some cases convulsions. The pain is almost always relieved by vomiting. There is much tenderness on pressure over the seat

of the pain; and the pain is excited by food, especially when hot. At other times it is the presence of undigested food which excites the pain, about three hours after a meal, and then probably the seat of the ulcer is the pylorus, and there is excess of acid. The urine occasionally contains acetone and diacetic acid (see *Tests*, Appendix).

The presence of anæmia is also an element in suspected cases, when the symptoms are not so manifest, as it is chiefly in chlorotic patients that gastric ulcers are formed. When perforation occurs there is sudden and violent abdominal pain, with great prostration, and death usually within a few hours; but sometimes there may be local peritonitis, and abscess formation (sub-phrenic abscess). In the chronic cases there is loss of body weight and strength. The *course* is generally lengthy, with improvement and relapses from time to time; but a large proportion of cases terminate in recovery, especially under treatment. In the fatal cases—in addition to the sudden ending of a case by perforation and fatal peritonitis—death may result from severe hæmorrhage; or from actual exhaustion from loss of blood, or from want of nourishment. The pathology, history, course, and treatment of an ulcer of the duodenum is much the same as a gastric ulcer. They are often the result of extensive burns. Blood may be vomited, but more frequently it is found in the stools. The pain comes later, a few hours after eating. Sometimes there is jaundice. (*Diagnosis*, see p. 163.)

The treatment of gastric ulcer consists of giving the patient as complete rest as possible. The avoidance of all irritating articles of diet—or, in short, an exclusively milk diet for several weeks—is the proper treatment. The milk may be given with lime water, and the nourishment may be supplemented by Valentine's beef juice, or beef tea, well made and free from fat. The patient may be supported by injections *per rectum*. Alkaline mineral waters are recommended to be used occasionally—to wash the coats of the stomach. Arsenic, silver, or bismuth is the usual drug administered—large doses of bismuth being considered the best. For hæmorrhage give ice to suck; and it may also be applied to the epigastrium with good results. Ergotin should be injected, if necessary. Turpentine (in emulsion) is the most certain remedy in hæmorrhage. If perforation take place, absolute rest, with hypodermic injections of morphia, is all that can be attempted in the way of *medical* treatment.

Cancer of the Stomach.—The stomach may be affected by cylindrical or spheroidal carcinoma—the latter being the more frequent. The appearance of the growth depends on the more or less development of fibrous tissue, and upon contraction and ulceration. When colloid degeneration takes place, a gelatinous tumour is the result. It is slower in its development. A cancerous mass tends to drag the stomach down, and should it affect the pylorus—which is by far the commonest site—the stomach suffers consequent dilatation from the stenosis. When the cardiac end of the stomach is the seat of the disease, the organ becomes contracted. Chronic catarrh of the stomach is present with the cancer, which is usually primary. Fatty heart and tuberculosis are often complications.

The etiology is still obscure, but heredity is established as a cause; and it rarely affects individuals under forty years of age.

The early symptoms are not distinctive; and until a tumour can be felt or the cachexia be developed, the symptoms are merely those of dyspepsia, in which *pain* is an almost constant feature. The areas over which it is felt are—in front, from nipple to umbilicus; behind, from fifth to twelfth dorsal spine. There is also cutaneous tenderness over these areas (*Head*). The pain, however, is not marked if the body of the stomach be the seat of the disease. It is invariably present when the pylorus, or cardiac portion, is affected. In some rare cases, cancer—especially the colloid form—may run its course without any characteristic sign, and only the *post-mortem* examination reveals the true nature of the disease. As the disease advances the dyspepsia becomes more aggravated. Pain, loss of appetite, discomfort and distress after food—as acidity, pyrosis, flatulence, and vomiting—are the symptoms common to all forms of cancer. The secretion of hydrochloric acid is, in most cases, much diminished. There is lactic and butyric acid fermentation (see *Tests*, Appendix). Should the disease affect the cardiac end of the stomach, there is obstruction of the food, and pain—usually referred to the œsophagus. The emaciation and loss of strength is quicker in this form, and the feeling of hunger is sometimes difficult to satisfy. Vomiting of blood (hæmatemesis) is present in most of the cases. Diarrhœa, in the later stages, is the rule—due to irritating matter passing into the bowels. Blood may also be present in the stools. The cancerous cachexia is that pallid, earthy, or “fawn” colour of the skin, associated with the debility and the emaciated appearance which always accompany the disease. A weak action of the heart, feeble pulse, and œdema of the ankles are secondary consequences, which generally usher in a fatal termination.

The tumour cannot be felt at all should it affect the cardiac end of the stomach, or should the disease be the colloid form. In the latter case, a diffused sense of resistance over the stomach may be appreciable. Tumours of the posterior wall may also escape detection. When the pyloric end of the stomach is the seat of the disease, hard nodular masses may be felt, especially if the patient be much emaciated. The tumour in such cases is generally much lower down than one would expect. Distention of the stomach may prevent the palpation of a tumour (see *Diagnosis*, p. 163, for the sources of error, &c.). It should be noted that a tumour of the stomach does not descend with full inspiration. Cancer may result in perforation and peritonitis; or in fistulous communications. The liver is often affected along with the stomach; and masses of adhesions to the neighbouring organs and structures are commonly found. The mesenteric glands are enlarged, and sometimes the cervical glands. The average duration is about one year.

The treatment can only be palliative. Milk and beef tea may be the only food which can be borne. Washing out the stomach gives relief. Arsenic sometimes relieves, and Bartholow recommends equal parts of carbolic acid and tincture of iodine—one drop of each,

well diluted—for vomiting. In most cases morphia must be used, either by mouth, or hypodermically.

Dilatation of the stomach (gastrextasis) may be, very rarely, *acute* and fatal (pain, anuria, and collapse, with signs of distention). The more chronic forms may arise from enfeeblement of the motor functions of the stomach; but, more usually, dilatation is the result of stenosis of the pylorus, and this may occur from simple inflammation and subsequent contraction of the submucous connective tissue; or it may be the result of cancerous disease or cicatrisation of a gastric ulcer. Tumours of other organs may also press upon the pylorus, and give rise to dilatation. The stomach walls are much thinned, and if there be no stenosis, the muscular layers are much atrophied. The organ is sometimes enormously dilated, especially so in the case of excessive beer-drinkers.

The **symptoms** are those of chronic dyspepsia; but the vomiting of large quantities of sour and semi-liquid food—putrid and fermenting—is the characteristic symptom. Thirst and cramping pains in the limbs are often present. The urine is diminished and less acid, and the *fæces* are dry—the bowels being constipated. There is loss of body weight and strength, and in severe cases, actual emaciation—even when cancer is not the cause. Convulsions or coma may result from the development of poisons in the stomach.

The **physical signs** vary with the state of the stomach in relation to the food. *When full*, there is dullness at the lower borders (when the patient is in the erect position), and the stomach is seen to be bulging, and to reach below the umbilicus; *when empty*, a tympanic and metallic note can be elicited over the same area. *Splashing* of the stomach contents can readily be made out when the abdomen is shaken suddenly with the palm of the hand. A more exact diagnosis may be made by passing a stomach syphon tube, and feeling the point of it through the abdominal wall, in an abnormally low position. Inflation may be practised.

Good results, in simple uncomplicated cases, may be expected by Kussmaul's treatment of washing out the stomach with warm water once a day. Hyposulphite of soda may also be used for the destruction of the sarcinae. Washing out the stomach, however, is apt to keep up the distention, when too long continued. Fenton Türk swabs out the stomach by means of a rotating sponge connected through a syphon tube. A *dry diet* is important; and the avoidance of all starchy and saccharine substances. A few test meals, of cold meat and bread, should be given to ascertain the digestive powers (see Appendix). Water may be given *per rectum*. Emetics may be given when the stomach tube cannot be used. Tonic doses of strychnine and hydrochloric acid should be prescribed. Massage and galvanism may be tried in obstinate cases.

Acute gastritis, or inflammation of the stomach, is usually caused by irritating and corrosive poisons (toxic gastritis). The ingestion of large quantities of cold water or iced food, when the body is heated, may produce a rapid congestion with acute pain in

the epigastrium. **Gastritis suppurativa** is a rare form of inflammation, in which the submucous tissues become much thickened, and an abscess may form.

The **symptoms** are pain and vomiting; fever and depression being marked in the suppurative form.

The **treatment** consists of morphia—by the mouth, or injected hypodermically; bland food—chiefly milk and peptonised gruels; and the application of hot fomentations or poultices.

Gastralgia, in its true form, is a chronic neurosis—the sensory nerves of the stomach being in some peculiar state. It is associated with the neurotic temperament, or with the hysterical, and frequently it is an accompaniment of uterine disease. The abuse of tea is supposed to be, in some cases, a cause of the affection. The pain occurs in paroxysms, and it is felt in the epigastrium, radiating over the chest and abdomen, and through to the back. It is *diminished* by pressure. The attacks are usually short and recurring, and they are accompanied by palpitation of the heart, weak pulse, and often great prostration. There is usually great flatulence and, ultimately, vomiting.

The **treatment** requires morphia or opium in the first place; and afterwards, quinine, arsenic, iron, or silver, should be given for a lengthened period. Care must be taken not to continue the silver pill too long, in case of producing *argyria*. The *milk cure* may be tried; and in all cases the food should be light, and only taken in small quantities at a time, rather than in regular meals.

Anorexia nervosa—another form of neurosis associated with complete loss of appetite, neurasthenia and emaciation—is best treated by prolonged rest in bed, careful feeding, and skilled nursing.

Enteroptosis, or visceroptosis, is the name given to a condition in which there is displacement, or a dragging down, of the abdominal viscera (Glénard's disease). It is more common in women. The symptoms consist of a sickening "dragging" pain, with gastric symptoms (vomiting, &c.). A physical examination may reveal prolapsed organs, which may be replaced and retained by suitable appliances. Surgical treatment may be necessary; but sometimes, on abdominal section, nothing abnormal has been found (*Treves*). The patients are most frequently neurotic.

The **differential diagnosis** of the foregoing diseases of the stomach.

The various forms of *dyspepsia* are not always sharply defined, but more frequently the symptoms are mixed, and the diagnosis is made according to the prominent symptoms and physical signs. *Dyspepsia* is often an independent functional affection; but it is frequently a result of antecedent disease—especially the atonic form.

The state of the heart should always be examined, as cardiac patients very frequently refer their symptoms to the stomach—the *dyspepsia* being a secondary consequence of heart disease. The

reverse is also frequently the case. Dyspepsia is also, sometimes, a symptom of incipient phthisis; or it may be associated with Bright's disease. These are familiar instances, but any grave organic disease in other organs may produce a dyspeptic state. *Gout* must also be remembered as a constitutional cause of dyspepsia.

An *acute gastric catarrh* may turn out to be typhoid or remittent fever. Almost all feverish conditions produce more or less gastric catarrh; but the history, the amount of fever and depression, and the future course of the disease, are the chief points in the diagnosis. The *vertigo a stomacho læso* (Trousseau)—occurring especially in aged persons—must be differentiated from cerebral disease.

Chronic gastric catarrh is often associated with mental diseases, especially melancholia and hypochondria; but a more common differentiation required in practice is *chronic gastric catarrh* from *ulcer of the stomach*, *cancer*, and *gastralgia*. These require also to be distinguished from one another, and from a few diseases affecting other organs.

The most characteristic symptoms of *ulcer* of the stomach are the shooting pains localised in front and posteriorly, coming at any time, aggravated by pressure, and generally worse after eating, or after drinking hot fluids; the "coffee-ground" character of the vomit; and the anæmic appearance of the patient. It is often not easy to be sure, in cases of chlorosis with chronic gastric catarrh, whether an ulcer may, or may not, be present, especially if the characteristic vomit be absent. The treatment may serve to distinguish them, as an exclusive milk diet improves the ulcer but not the chlorotic condition.

In *cancer of the stomach* the pain is more fixed and continuous; the vomiting *at first* does not contain blood, and it is not a constant symptom; and the emaciation, cachexia, and age are important points. In early cases without pain, phthisis and pernicious anæmia may require to be differentiated, but if palpation reveal the presence of a tumour, and possibly enlargement of the sub-clavicular glands, along with the symptoms, then the case is clear; but a tumour of the liver or pancreas, a movable kidney, or aneurism of the hepatic artery, require to be distinguished from cancer of the stomach. A tumour of the stomach does not descend with full inspiration. Distention of the stomach, or the presence of fluid in the peritoneal cavity, may entirely conceal a tumour growth. The stomach contents should be tested.

In *gastralgia* the pain is paroxysmal, and there is relief for prolonged intervals, and it is not increased by pressure. Eating may not increase the pain; and there is no vomiting of blood, nor emaciation with cachexia. The neurotic temperament is generally obvious. *Neuralgia of the solar plexus*, *hepatic colic*, *myalgia*, and *intercostal neuralgia* require to be differentiated from gastralgia. In the first there is great systemic depression with inhibition of the heart's action; in hepatic colic there is jaundice, pain in the right hypochondrium shooting to the umbilicus, and fever; in myalgia the pain is not so lancinating, and it is relieved by pressure; in inter-

costal neuralgia the pain is localised to the nerve, and there are tender points along its course, and at the spine.

In *chronic gastric catarrh* alone, the pain is not so intense, is more diffused, and it is often relieved by eating. Pressure does not aggravate the pain. Vomiting is not always present, but if so, there is no blood.

In *dilatation of the stomach* the physical manifestations of the disease serve to differentiate the condition from all others. It must not be forgotten, however, that it may be produced by cancerous strictures, and by pressure of tumours of other organs.

Acetomuria and *diaceturia* are conditions which are occasionally present in acute and chronic affections of the digestive tract—*e.g.*, gastric ulcer, catarrh, dilatation, &c. The symptoms consist of epigastric pain, vomiting, giddiness, and headache. In severe forms there may be drowsiness and convulsions. The breath may smell of acetone (see Appendix).

Hæmatemesis, or vomiting of blood, is a symptom of many diseases. There may be a sensation of warmth and distention in the stomach, nausea, and faintness, followed by vomiting. The blood is acid in reaction, black-brown in colour, and is not aerated. It may be mixed with food. If the blood be vomited at once, it is red and coagulated. Vomited fruit may sometimes resemble blood.

As blood may be swallowed, then vomited, a careful examination of the nares and palate should be made. When from the lungs, the blood is *coughed* up, and not vomited, and the previous history or the physical examination of the chest, may reveal the source. Blood from the lung is alkaline, bright red, and frothy.

Rupture of a blood-vessel in the stomach is the essential cause of hæmatemesis, and this may be due to disease of the vessels; but hæmatemesis may occur in cirrhosis of the liver, acute yellow atrophy, yellow fever, aneurisms of the hepatic artery, and calculi or tumours in the neighbourhood of the portal vein. More common causes are obstructive diseases of the heart and lungs, the hæmorrhagic diathesis, alcoholism, cancer and ulcer of the stomach—the latter being much the commonest cause. The hæmorrhage is sometimes vicarious; and sometimes it arises from the arrest of a hæmorrhoidal discharge.

The *immediate treatment* should consist of absolute rest, ice to suck, and ice applied to the epigastrium. A ligature may be tied round the thighs—or the legs may be suffered to dangle over the bed, while the shoulders are slightly raised. Morphia, with dilute sulphuric acid, is a useful remedy (R 26). Tincture of perchloride of iron is also useful. Milk *only* should be allowed for a few days. The later treatment depends upon the cause.