by bismuth, salicylate of bismuth, naphthol, acetanilid, asepsin, and the numerous new antiseptic remedies.

CATARRHAL INFLAMMATION OF THE LOWER PHARYNX.

Pathogeny and Symptoms.—This may be acute or chronic. Both forms arise under precisely the same conditions as the corresponding maladies of the naso-pharyngeal space. The changes in the acute form consist of redness, swelling of the mucous membrane, enlargement of the follicles from accumulation of their contents, and increased secretion, coming on after a very brief dry stage. These anatomical conditions are not limited to the pharynx. In the chronic form, the changes are more decided. The mucous membrane is of a deep reddish-brown, or, in very old cases, grayish. The vessels of the mucous membrane are enlarged and tortuous. The follicles are enlarged and prominent, and have a grayish or reddish-gray color ; there may be considerable development in places of the squamous epithelium, and ulcers, rather shallow than deep, form in various situations. The symptoms are by no means pronounced. Dryness, a sense of heat and irritation, a feeling as if something were adherent to the mucous membrane, much hawking and clearing the throat, are the chief sensations. On inspection of the fauces the mucous membrane is seen to be of a deep, reddish-brown color, thick, coated with a tenacious mucus, and roughened by enlarged follicles. In very old cases the posterior wall of the pharynx is smooth, thin, and glazed, in consequence of atrophic changes succeeding to the inflammatory, and has adherent to it dry masses of mucus, colored by dust.

Treatment.—The principles and the methods of practice advised for the naso-pharyngeal space are equally applicable here.

RETRO-PHARYNGEAL ABSCESS.

Definition.—By this term is meant an accumulation of pus in the submucous connective tissue, posterior to the pharyngeal wall. An abscess may form in the mucous membrane itself—this is entitled pharyngeal abscess.

Causes.—Diseases of the cervical vertebra, of the atlas and axis, as caries, are the principal causes. Large collections are formed in the same situation, from suppuration in the bronchial glands, and in the deep cervical lymphatics—the pus dissecting up under the mucous membrane, and pointing in the pharynx. Again, an abscess may be the result of an inflammation of the loose connective tissue, under the pharyngeal mucous membrane, a disease not infrequent in children before the tenth year.

Symptoms.—The abscess produced by an acute inflammation of the connective tissue is very acute in its course. It begins with chill, high

fever, sleeplessness, intense restlessness, and in very young children there may be convulsions. When the abscess results from caries of the vertebræ, its march is slower, and the symptoms of pharyngeal obstruction are the first to call attention to this part. Pain in moving the head is felt, and hence it assumes a fixed position, the cervical muscles being rigid. Then difficulty of swallowing and dyspnœa come on. If digital exploration is then made by passing the index-finger gently over the base of the tongue, a hard, brawny, possibly fluctuating swelling may be detected in the pharynx. The neck will also be much swollen externally, and fluctuation may ultimately be felt under the angle of the jaw. Suppuration is often announced by the occurrence of a chill, and the fever will then assume an intermittent or remittent type, and profuse sweats will occur. The abscess, if not interfered with by art, will discharge spontaneously into the lower pharynx, or externally, or form fistulous communication with the cavity. The author has seen one case in an adult, which extended from the basilar process to the root of the lungs. When spontaneous opening of the abscess takes place, suffocation may be caused by escape of the matter into the larynx. Death may also be caused by the size of the collection, the larynx being occluded, or by secondary disease of the air-passages, or by thrombosis of the transverse sinus, or jugular vein, or even of the carotid artery.

Course, Duration, and Termination.—There are great differences, according to the origin of the abscess, in the course pursued. Those due to caries of the vertebra are slow in development, but fatal in result. The phlegmonous abscess is acute, pursues its course in from five to twenty days or longer, and the danger is determined by the size of the collection, and the direction taken by the pus if not spontaneously evacuated. If not large, the abscess will discharge and heal without danger to life. The large submucous abscess will almost always prove fatal by exhaustion.

Treatment.—Pus should be evacuated at the earliest moment. The powers of life must be sustained by proper aliment and the free use of stimulants. The formation and spread of pus must be limited by the administration of quinine, as far as such a result is possible, and by calcium sulphide, malt extract, the hypophosphites, phosphates, etc.

DISEASES OF THE ŒSOPHAGUS.

CATARRH OF THE ŒSOPHAGUS—ŒSOPHAGITIS.

Causes.—Acute œsophagitis exists only as a part of a morbid process involving the mouth, fauces, and stomach. Typical examples are afforded by the action of irritant poisons and corrosive substances.

The chronic variety is produced by the causes which give rise to the chronic stomatitis. The acute and chronic forms differ so little that they may be considered together. The change in the mucous membrane consists in more or less hyperæmia, especially about the follicles; at first an arrest of secretion, followed by an abundant pouring out of mucus, which in the chronic form is always in excess. Considerable hypertrophic thickening of the mucous membrane occurs in the chronic malady, and in some situations takes on the form of papillary or polypoid-like outgrowths. Coincident thickening of the muscular layer also occurs. Erosions of the mucous membrane, at first superficial, are produced by disintegration and separation of the epithelium, and ulcers are then formed, which may extend to the deeper layers. The greatest diameter of these ulcers is parallel to the long axis of the tube. Ulcers also result from the impaction of foreign bodies; from corrosive liquids; from tubercular deposition, etc. The catarrhal form may be confined to the follicles, when it is called follicular œsophagitis. The follicles are swollen and prominent, partly in consequence of an abnormal accumulation of their contents, and partly in consequence of an hypertrophy and contraction of the adjacent connective tissue. The diseased follicles appear as firm nodules, somewhat conical in shape, projecting above the general surface, and irregularly distributed along the tube. A fibrous or croupous œsophagitis also exists, not as an independent affection, but consisting of an extension downward of an exudation, croupous or diphtheritic, or occurs as a complication in typhus, scarlet fever, small-pox, etc. There is, also, a phlegmonous or purulent inflammation of the œsophagus, which comes on by extension of purulent infiltration of neighboring parts, as in perichondritis of the larynx, by the action of corrosive substances, by lodgment of foreign bodies, etc.

Symptoms.—In either acute or chronic form, œsophagitis produces but few symptoms. Pain in swallowing is usually present in the acute form, and may be developed in the chronic cases by the ingestion of hot or rough foods. Pain may be caused by pressure on the tube from without, and by the passage of an œsophageal bougie—a procedure by which we may designate the seat of ulceration, or lesser kinds of irritation, even. When there is severe local disease at any point, as an ulcer, for example, food swallowed descends to that point, excites a sensation of heat and pain, and is then regurgitated by a sudden reflex spasm of the tube. Sometimes mucus or muco-purulent matter will be found adherent to the particles of food. Chronic catarrh is especially characterized by the production of much glairy and tenacious mucus, which rises into the pharynx, causing the sensation of the presence of a foreign body. The attempt to clear the throat of this often excites gagging. These symptoms are, not unfrequently, confounded with those due to corresponding diseases of the throat, especially chronic and follicular catarrh.

Course and Duration.—Simple acute catarrh terminates in a few days. When produced by corrosive liquids, the process of cicatrization will occupy several weeks, and subsequent contractions and strictures may so interfere with nutrition as to cause death by marasmus after many months. The chronic, and especially the follicular, variety may continue unchanged for years.

Treatment.—The management of the various forms of œsophagitis is the same as the corresponding affections of the mucous membrane of the mouth. The topical applications must necessarily be restricted to the agent swallowed.

DYSPHAGIA.

Dysphagia, or difficulty of swallowing, is a symptom of disease, but not a disease itself. It is frequently hysterical, when it is accompanied by other hysterical manifestations, as the globus hystericus, laughing and crying, etc. It may be hypochondriacal, when the patients present the deep dejection, the indifference, and other symptoms of that state. It may be due to stricture, succeeding to injury by steam, corrosive liquids, injuries of various kinds, cicatricial tissue, malignant disease, etc. It may also be due to paralysis of the palate, a sequel of diphtheria. It will be more appropriately considered when these topics are discussed.

STENOSIS OF THE ŒSOPHAGUS.

Causes.—The term stenosis signifies narrowing of the œsophagus, produced in various ways. It may be congenital or acquired: the latter only will be considered here. As regards acquired stenoses, they may be produced by causes acting from without, by compression; within, by obstruction. As respects those acting from without, we find the lumen of the œsophagus narrowed by tumors, the enlarged thyroid, aneurisms, caseous lymphatics, etc. Obstructions from the interior are caused by foreign bodies lodged, which usually produce acute symptoms, but sometimes remain, lodged in pockets or diverticula, for months or years. Parasitic growths gradually developing may cause stenosis. Fibroid polypi, club-shaped or lobulated, slowly obstruct the canal, and hence cause the symptoms of obstruction very slowly. Strictures are formed by the contraction of cicatrices, or by carcinoma. Cancerous stenoses are more frequent than all the others combined. Their usual seat is the lower third of the canal, and they may involve the whole periphery and a considerable part longitudinally.

Symptoms.—Increasing difficulty in the passage of food, which the patient recognizes at a certain point, is usually the first symptom ex-

perienced. Swallowing is successful, but the patient feels a sense of obstruction below, requiring at first repeated attempts at swallowing to overcome ; then repeated sips of water, with more swallowing to dislodge the bolus ; and, when the obstruction reaches a certain point, regurgitation occurs, not in consequence of an inverted peristalsis, but the mechanical effect of partial compression of a tube containing liquid contents. The position of the obstruction is pretty accurately indicated by the sensations of the patient and by the time when regurgitation takes place. In acute stenosis—from burns, scalds and corrosives—and in chronic carcinoma, when complete obstruction occurs, food is regurgitated as soon as swallowed. The physical signs of stenosis are important. On *inspection* in thin persons, the movement of the bolus may be seen descending to the point of stoppage if high enough up, or the return movement may be discerned. Enlarged lymphatics may be visible at the root of the neck, and the abdomen, especially the hypochondria, may be flattened and retracted, indicating starvation. On *auscultation* the normal œsophageal sound produced by the passage of foods may be heard suddenly arrested at the point of obstruction and passing upward on regurgitation, or various adventitious sounds may be audible, as gurgling, sucking, spluttering, etc., at the point of narrowing. An important symptom is spasm of the glottis, produced by pressure of a growth, especially cancerous, on the recurrent laryngeal nerve. A peculiar cough, sudden paroxysms of difficult breathing, and a toneless voice, are thus caused. Difficulty of breathing may also be due to pressure on the trachea simultaneously with the œsophageal pressure. The most tormenting hunger and thirst arise in the progress of the case, and increase with the increasing difficulty of getting aliment in the stomach ; the body emaciates to an extraordinary extent ; the mind is incessantly occupied with thoughts of savory viands, and, in the delirium with which the scene closes, the hapless patient is engaged with the most sumptuous repasts.

Diagnosis.—The spasmodic stenosis of the hysterical and hypochondriacal is accompanied by the usual symptoms of these states, and the condition of the patient as to nutrition is not in harmony with the gravity of the local phenomena. Acute stenosis is preceded by the history of injury by scalding or burning, or by the ingestion of corrosive liquids. The question of cancer is to be considered with reference to the age, which is almost always after forty-five, and the development of the disease is marked by a gradually increasing difficulty of swallowing, by marasmus, and the cancerous cachexia. External compression may be produced by enlarged lymphatics, by an hypertrophied thyroid, by mediastinal and cervical tumors ; but these can easily be differentiated from all kinds of internal obstruction. An aneurism of the arch of the aorta, by compression of the œsophagus and of the recurrent laryngeal nerve, will cause symptoms not unlike those due

to cancer of this tube ; but there will be present the signs of aneurism. Diagnosis will in all cases be greatly facilitated by the œsophageal bougie ; but this instrument must be used with caution when the canal is much injured, lest perforation be produced by its passage.

Prognosis.—The termination is fatal in a large proportion of cases of stenosis ; but excellent results may, sometimes, be obtained by the patient and persistent use of the means of dilatation in cases of stenosis by cicatrices.

Treatment.—As hopeless as the therapeutical management may appear, such results as can be effected by massive doses of iodides, and by galvanism, are so remarkable that I can not fail to urge the trial of such expedients. When the time arrives that the usual treatment makes no impression, ℈j to ℈ij doses of sodium iodide should be administered until active iodism occurs. Galvano-faradism, also, has proved to be highly useful—one electrode on the spine between the scapulæ and the other on the epigastrium.

DILATATIONS OF THE ŒSOPHAGUS.

Causes and Symptoms.—Dilatation is a uniform enlargement of the œsophagus, the whole cylinder usually being involved. A diverticulum is a protrusion from the walls laterally, forming a sac of greater or less extent. Ektasia may be caused by fatty degeneration of the muscular layer, which yields in the act of contracting on the bolus as it descends to the stomach. With increasing dilatation, there is increasing weakness of the muscular layer and consequent dysphagia. Vomiting and regurgitation presently occur ; after a while the nutrition fails, and the objective symptoms are similar to those of stenosis, the ultimate result being equally unfortunate. Diverticula may be caused by the lodgment of foreign bodies leading to the formation of pouch-like protrusions. Pressure diverticula are usually situated at or about the junction of the pharynx with the œsophagus, and in the median line, posteriorly, for here the longitudinal muscular fibers are wanting and the pressure is greatest. When fully formed, they are deep pockets, or sacs, of varying length, and may be several inches deep. The first step in their formation is the lodgment of a foreign body ; then yielding of the muscular layer of the tube, due to fatty degeneration of the muscular elements ; increasing pressure from deposits of food and drink ; the final result being a sac extending downward and behind the œsophagus. The mechanical effect of a sac in this situation is to push the tube before it and compress it, so that ultimately the food and drink drop into the sac instead of passing into the stomach, thus causing the symptoms of stenosis. The symptoms, however, develop more slowly than in even the most chronic cases of stenosis. Diverticula occur in the great majority of instances after

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 forgetten 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-