and watery, but at the beginning of the bleeding the blood is rich in corpuscles and coagulates firmly.

Diagnosis.—In the diagnosis of the condition the family tendency is important. A single uncontrollable hæmorrhage in child or adult is not to be ranked as hæmophilia; but it is only when a person shows a marked tendency to multiple hæmorrhages, spontaneous or traumatic, which tendency is not transitory but persists, particularly if there have been joint affections, that we may consider the condition hæmophilia. Peliosis rheumatica is an affection which touches hæmophilia very closely, particularly in the relation of the joint swelling. It may also show itself in several members of a family. The diagnosis from the various forms of purpura is usually easy.

Prognosis.—The patients rarely die in the first bleeding. The younger the individual the worse is the outlook, though it is rarely fatal in the first year. Grandidier states that of 152 boy subjects, 81 died before the termination of the seventh year. The longer the bleeder survives the greater the chance of his outliving the tendency; but it may persist to old age, as shown in the case of Oliver Appleton, the first reported American bleeder, who died at an advanced age of hæmorrhage from a bed-sore and from the urethra. The prognosis is graver in a boy than in a girl. In the latter menstruation is sometimes early and excessive, but fortunately, in the female members of hæmophilic families, neither this function nor the act of parturition brings with it special dangers.

Treatment.—Members of a bleeder's family, particularly the boys, should be guarded from injury, and operations of all sorts should be avoided. The daughters should not marry, as it is through them that the tendency is propagated.

When an injury or wound has occurred, absolute rest and compression should first be tried, and if these fail the styptics may be used. In epistaxis ice, tannin, and gallic acid may be tried before resorting to plugging. Internally ergot seems to have done good in several cases. Legg advises the perchloride of iron in half-drachm doses every two hours with a purge of sulphate of soda. Venesection has been tried in several cases. Transfusion has been employed, but without success. During convalescence, iron and arsenic should be freely used.

SECTION III.

DISEASES OF THE DIGESTIVE SYSTEM.

I. DISEASES OF THE MOUTH.

STOMATITIS.

(1) **Acute Stomatitis.**—Simple or erythematous stomatitis, the commonest form of inflammation of the mouth, results from the action of irritants of various sorts. It is frequent at all ages. In children it is often associated with dentition and with gastro-intestinal disturbance, particularly in ill-nourished, unhealthy subjects. In adults it follows the overuse of tobacco and the use of too hot or too highly seasoned food. It is a frequent concomitant of indigestion, and is met with in the acute specific fevers.

The affection may be limited to the gums and lips or may extend over the whole surface of the mouth and include the tongue. There is at first superficial redness and dryness of the membrane, followed by increased secretion and swelling of the tongue, which is furred, and indented by the teeth. There is rarely any constitutional disturbance, but in children there may be slight elevation of temperature. The condition is sufficient to cause considerable discomfort, sometimes amounting to actual distress and pain, particularly in mastication.

In infants the mouth should be carefully sponged after each feeding. A mouth-wash of borax or the glycerine of borax may be used, and in severe cases, which tend to become chronic, a dilute solution of nitrate of silver (three or four grains to the ounce) may be applied.

(2) **Aphthous Stomatitis.**—This form, also known as *follicular* or *vesicular* stomatitis, is characterized by the presence of small, slightly raised spots, from two to four millimetres in diameter, surrounded by reddened areolæ. The spots appear first as vesicles, which rupture, leaving small ulcers with grayish bases and bright-red margins. They are seen most frequently on the inner surfaces of the lips, the edges of the tongue, and the cheeks. They are seldom present on the mucous membrane of the pharynx. This form is met with most often in children under three years. It may occur either as an independent affection or in association with any

one of the febrile diseases of childhood or with an attack of indigestion. The crop of vesicles comes out with great rapidity and the little ulcers may be fully formed within twenty-four hours. The child complains of soreness of the mouth and takes food with reluctance. The buccal secretions are increased, and the breath is heavy, but not foul. The constitutional symptoms are usually those of the disease with which the aphthæ are associated. The disease must not be confounded with thrush. No special parasite has been found in connection with it. It is not a serious condition, and heals rapidly with the improvement of the constitutional state. In severe cases it may extend to the pillars of the fauces and to the pharynx, and produce ulcers which are irritating and difficult to heal.

Each ulcer should be touched with nitrate of silver and the mouth should be thoroughly cleansed after taking food. A wash of chlorate of potash, or of borax and glycerine, may be used. The constitutional symptoms should receive careful attention.

(3) **Ulcerative Stomatitis.**—This form, which is also known by the names of *fetid stomatitis*, or *putrid sore mouth*, occurs particularly in children after the first dentition. It may prevail as a wide-spread epidemic in institutions in which the sanitary conditions are defective. It has been met with in jails and camps. Insufficient and unwholesome food, improper ventilation, and prolonged damp, cold weather seem to be special predisposing causes. Lack of cleanliness of the mouth, the presence of carious teeth, and the collection of tartar around them favor the development of the disease. The affection spreads like a specific disease, but the microbe has not yet been isolated. It has been held that the disease is the same as the foot-and-mouth disease of cattle, and that it is conveyed by the milk, but there is no positive evidence on these points. Payne suggests that the virus is identical with that of contagious impetigo.

The morbid process begins at the margin of the gums, which become swollen and red, and bleed readily. Ulcers form, the bases of which are covered with a grayish-white, firmly adherent membrane. In severe cases the teeth may become loosened and necrosis of the alveolar process may occur. The ulcers extend along the gum-line of the upper and lower jaws; the tongue, lips, and mucosa of the cheeks are usually swollen, but rarely ulcerated. There is salivation, the breath is foul, and mastication is painful. The submaxillary lymph glands are enlarged. The constitutional symptoms are often severe, and in institutions death sometimes results in the case of debilitated children.

In the treatment of this form of stomatitis chlorate of potash has been found to be almost specific. It should be given in doses of ten grains, three times a day, to a child, and to an adult double that amount. Locally it may be used as a mouth-wash, or the powdered salt may be applied directly to the ulcerated surfaces. When there is much fetor a permanganate-of-potash wash may be used, and an application of nitrate of silver may be made to the ulcers.

There are several *other varieties* of ulcerative sore mouth, which differ entirely from this form. Ulcers of the mouth are common in nursing women, and are usually seen on the mucous membrane of the lips and cheeks. They develop from the mucous follicles, and are from three to five millimetres in diameter. They may cause little or no inconvenience; but in some instances they are very painful and interfere seriously with the taking of food and its mastication. As a rule they heal readily after the application of nitrate of silver, and the condition is an indication for tonics, fresh air, and a better diet.

Parrot describes the occasional appearance in the new-born of small ulcers symmetrically placed on the hard palate on either side of the middle line. They are met with in very debilitated children. The ulcers rarely heal; usually they tend to increase in size, and may involve the bone.

(4) **Parasitic Stomatitis** (*Thrush; Soor; Muguet*).—This affection, most commonly seen in children, is dependent upon a fungus, the *saccharomyces albicans*, called by Robin the *oïdium albicans*. It belongs to the order of yeast fungi, and consists of branching filaments, from the ends of which ovoid torula cells develop. The disease does not arise apparently in a normal mucosa. The use of an improper diet, uncleanliness of the mouth, the acid fermentation of remnants of food, or the development, from any cause, of catarrhal stomatitis predispose to the growth of the fungus. In institutions it is frequently transmitted by unclean feeding-bottles, spoons, etc. It is not confined to children, but is met with in adults in the final stages of fever, in chronic tuberculosis, diabetes, and in cachectic states. The parasite develops in the upper layers of the mucosa, and the filaments form a dense felt-work among the epithelial cells. The disease begins on the tongue and is seen in the form of slightly raised, pearly-white spots, which increase in size and gradually coalesce. The membrane thus formed can be readily scraped off, leaving an intact mucosa, or, if the process extends deeply, a bleeding, slightly ulcerated surface. The disease spreads to the cheeks, lips, and hard palate, and may involve the tonsils and pharynx. In very severe cases the entire buccal mucosa is covered by the grayish-white membrane. It may even extend into the œsophagus and, according to Parrot, to the stomach and cæcum. It is occasionally met with on the vocal cords. Robust, well-nourished children are sometimes affected, but it is usually met with in enfeebled, emaciated infants with digestive or intestinal troubles. In such cases the disease may persist for months.

The affection is readily recognized, and must not be confounded with aphthous stomatitis, in which the ulcers, preceded by the formation of vesicles, are perfectly distinctive. In thrush the microscopical examina-

tion shows the presence of the characteristic fungus throughout the membrane. In this condition, too, the mouth is usually dry—a striking contrast to the salivation accompanying aphthæ.

Thrush is more readily prevented than removed. The child's mouth should be kept scrupulously clean, and, if artificially fed, the bottles should be thoroughly sterilized. Lime-water or any other alkaline fluid, such as the bicarbonate of soda (a drachm to a tumbler of water), may be employed. When the patches are present these alkaline mouth-washes may be continued after each feeding. A spray of borax or of sulphite of soda (a drachm to the ounce) or the black wash with glycerine may be employed. The permanganate of potassium is also useful. The constitutional treatment is of equal importance, and it will often be found that the thrush persists, in spite of all local measures, until the general health of the infant is improved by change of air or the relief of the diarrhœa, or, in obstinate cases, the substitution of a natural for the artificial diet.

(5) **Gangrenous Stomatitis** (*Cancrum Oris; Noma*).—An affection characterized by a rapidly progressing gangrene, starting on the gums or cheeks, and leading to extensive sloughing and destruction. This terrible but fortunately rare disease is seen only in children under very insanitary conditions or during convalescence from the acute fevers. It is more common in girls than in boys. It is met with between the ages of two and five years. In at least one half of the cases the disease has developed during convalescence from measles. Cases have been seen also after scarlet fever and typhoid. The mucous membrane is first affected, usually of the gums or of one cheek. It begins insidiously, and when first seen there is a sloughing ulcer of the mucous membrane, which spreads rapidly and leads to brawny induration of the skin and adjacent parts. The sloughing extends, and in severe cases the cheek is perforated. The disease may spread to the tongue and chin; it may invade the bones of the jaws and even involve the eyelids and ears. In mild cases an ulcer forms on the inner surface of the cheek, which heals or may perforate and leave a fistulous opening. Naturally in such a severe affection the constitutional disturbance is very great, the pulse is rapid, the prostration extreme, and death usually takes place within a week or ten days. The temperature may reach 103° or 104°. Diarrhœa is usually present, and aspiration pneumonia often develops. H. R. Wharton has described a case in which there was extensive colitis. Lingard has found in cases of noma a thread-like bacillus, but its precise relation to the disease is doubtful. The highly refractile bodies described by Sansom in the blood were probably blood-plates.

The treatment of the disease is unsatisfactory. In many cases the onset is so insidious that there is an extensive sloughing sore when the case first comes under observation. Destruction of the sore by the cautery, either the Paquelin or fuming nitric acid, is the most effectual. Antiseptic applications should be made to destroy the fetor. The child should be carefully nourished and stimulants given freely.

(6) **Mercurial Stomatitis** (*Ptyalism*).—An inflammation of the mouth and salivary glands caused by mercury, which occurs chiefly in persons who have a special susceptibility, and rarely now as a result of the excessive use of the drug. It is met with also in persons whose occupation necessitates the constant handling of mercury. It often follows the administration of repeated small doses. Thus, a patient with heart disease who was ordered an eighth of a grain of calomel every three hours for diuretic purposes had, after taking eight or ten doses, a severe stomatitis, which persisted for several weeks. I have known it to follow also the administration of small doses of gray powder. The patient complains first of a metallic taste in the mouth, the gums become swollen, red, and sore, mastication is difficult, and soon there is a great increase in the secretion of the saliva, which flows freely from the mouth. The tongue is swollen, the breath has a foul odor, and, if the affection progresses, there may be ulceration of the mucosa, and, in rare instances, necrosis of the jaw. Although troublesome and distressing, the disease is rarely serious, and recovery usually takes place in a couple of weeks. Instances in which the teeth become loosened or detached or in which the inflammation extends to the pharynx and Eustachian tubes are rarely seen now.

The administration of mercury should be suspended so soon as the gums are "touched." Mild cases of the affection subside within a few days and require only a simple mouth-wash. In severer cases the chlorate of potash may be given internally and used to rinse the mouth. The bowels should be freely opened; the patient should take a hot bath every evening and should drink plentifully of alkaline mineral waters. Atropine is sometimes serviceable, and may be given in doses of one one hundredth of a grain twice a day. Iodine is also recommended. When the salivation is severe and protracted the patient becomes much debilitated, anæmia develops, and a supporting treatment is indicated. The diet is necessarily liquid, for the patient finds the chief difficulty in taking food. If the pain is severe a Dover powder may be given at night.

Here may be appropriately mentioned the influence of stomatitis, particularly the mercurial form, upon the developing teeth of children. The condition known as *erosion*, in which the teeth are honeycombed or pitted owing to defective formation of enamel, is indicative as a rule of infantile stomatitis. Such teeth must be distinguished carefully from those of congenital syphilis, which may of course coexist, but the two conditions are distinct. The honeycombing is frequently seen on the incisors; but, according to Jonathan Hutchinson, the test teeth of infantile stomatitis are the first permanent molars, then the incisors, "which are almost as constantly pitted, eroded, and of bad color, often showing the transverse furrow which crosses all the teeth at the same level." Magitot regards these transverse furrows as the result of infantile convulsions or

of severe illnesses during early life. He thinks they are analogous to the furrows on the nails which so often follow a serious disease.

II. DISEASES OF THE SALIVARY GLANDS.

1. **Hypersecretion** (*Ptyalism*).—The normal amount of saliva varies from two to three pints in the twenty-four hours. The secretion is increased during the taking of food and in the physiological processes of dentition. A great increase, to which the term *ptyalism* is applied, is met with under many circumstances. It occurs occasionally in mental and nervous affections and in rabies. Occasionally it is seen in the acute fevers, particularly in small-pox. It has been met with during gestation, usually early, though it may persist throughout the entire course. It has been known to occur at each menstrual period; and, lastly, it is a common effect of certain drugs. Mercury, gold, copper, the iodine compounds, and (among vegetable remedies) jaborandi, muscarin, and tobacco excite the salivary secretion. Of these we most frequently see the effect of mercury in producing ptyalism. The salivation may be present without any inflammation of the mouth.

2. **Xerostomia** (*Arrest of the Salivary and Buccal Secretions; Dry Mouth*).—In this condition, first described by Jonathan Hutchinson, the secretions of the mouth and salivary glands are suppressed. The tongue is red, sometimes cracked, and quite dry; the mucous membrane of the cheeks and of the palate is smooth, shining, and dry; and mastication, deglutition, and articulation are very difficult. The condition is not common. A majority of the cases are in women, and in several instances have been associated with nervous phenomena. The general health, as a rule, is unimpaired. Hadden suggests that it is due to involvement of some centre which controls the secretion of the salivary and buccal glands. A well-marked case came under my observation in a man aged thirty-two, who was sent to me by Donald Baynes on account of a peculiar growth along the gums. This proved to be the remnants of food which, owing to the absence of any salivary or buccal secretions, collected along the gums, became hardened, and adhered to them. The condition lasted for three weeks, and was cured by the galvanic current.*

3. **Inflammation of the Salivary Glands.**

(*a*) *Specific Parotitis.* (See MUMPS.)

(*b*) *Symptomatic parotitis* or *parotid bubo* occurs:

(1) In the course of the infectious fevers—typhus, typhoid, pneumonia, pyæmia, etc. In ordinary practice it occurs oftenest, perhaps, in typhoid fever. It is the result either of septic infection through the blood, or the inflammation, in many cases, passes up the salivary duct and so reaches the gland. The process is usually very intense and leads rapidly to suppuration. It is, as a rule, an unfavorable indication in the course of a fever.

(2) In connection with injury or disease of the abdomen or pelvis, a condition to which Stephen Paget has called special attention. Of 101 cases of this kind, "10 followed injury or disease of the urinary tract, 18 were due to injury or disease of the alimentary canal, and 23 were due to injury or disease of the abdominal wall, the peritonæum, or the pelvic cellular tissue. The remaining 50 were due to injury, disease, or temporary derangement of the genital organs." By temporary derangement is meant slight injuries or natural processes—a slight blow on the testis, the introduction of a pessary, menstruation, or pregnancy. He states that this form of parotitis is not, as a rule, associated with signs of septicæmia or pyæmia. It may occur in connection with gastric ulcer. Of the 101 cases 37 died, the majority of them not from the parotitis, but from the primary lesion with which it was associated. After an operation it occurs usually within the first week, often on the seventh day. There may be pyrexia, but many cases are afebrile. One gland is usually attacked, but both may be involved. In 78 cases in which the termination was noted 45 suppurated and 33 resolved without suppuration. The etiology of this form of parotitis is obscure. Many of the cases are undoubtedly septic.

(3) In association with facial paralysis, as in a case of fatal peripheral neuritis described by Gowers.

In the treatment of parotid bubo the application of half a dozen leeches will sometimes reduce the inflammation and promote resolution. When suppuration seems inevitable hot fomentations should be applied. A free incision should be made *early*.

* Canada Medical and Surgical Journal, vol. v, p. 439, 1877.

III. DISEASES OF THE PHARYNX.

(1) **Circulatory Disturbances.**—(*a*) *Hyperæmia* is a common condition in acute and chronic affections of the throat, and is frequently seen as a result of the irritation of tobacco smoke. Venous stasis is seen in valvular disease of the heart, and in mechanical obstruction of the superior vena cava by tumor or aneurism. In aortic insufficiency the capillary pulse may sometimes be seen and the intense throbbing of the internal carotid may be mistaken for aneurism.

(*b*) *Hæmorrhage* is found in association with bleeding from other mucous surfaces, or it is due to local causes in the pharynx itself. In the latter case it may be mistaken for hæmorrhage from the lungs or stomach. The bleeding may come from granulations or vegetations in the naso-pharynx. Sometimes the patient finds the pillow stained in the morning with bloody secretion. The condition is rarely serious, and only