Acute Catarrh of the Larynx.

(Acute Laryngitis).

Catarrh (or inflammation) of the larynx presents the same appearances as catarrh of the other mucous membranes: redness (vascular injection, sometimes punctate extravasations of blood), softening, and swelling. The submucous tissue is also usually to some extent involved in the inflammatory process.

The catarrh may affect, in greater or less intensity, *every* part of the larynx, or it may be *limited* to particular parts, such as the epiglottis, the arytenoid cartilages, or the vocal cords. In the latter case, therefore, we are justified in speaking of an epiglottitis, arytenoiditis, or chorditis.

Inflammation of the *epiglottis* is characterized by a deep red coloration, more frequently of its posterior than its anterior surface, and sometimes also, when the inflammation is intense, by a greater or less degree of swelling. Inflammations of the posterior wall of the larynx and of the mucous membrane which covers the *arytenoid cartilages*, are exceedingly common. The last-mentioned structures swell up very considerably, till they may be as large as peas or small beans, and become deep red in colour; their mobility in inspiration and expiration may also be diminished.—The *superior* or *false vocal cords* are also often the seat of inflammatory swelling, when they partly hide the true vocal cords; the latter then appear narrower than usual, and show only a small portion of their margin during phonation. The inflamed superior vocal cords also encroach on the ventricles of the larynx or may even obliterate them.—But of all the parts within the larynx the true *vocal cords* exhibit the most striking changes when inflamed; normally white, with a bright tendinous lustre, they become more or less deeply injected, and vary in colour from light rose to dark red, which may be spread uniformly or irregularly over their surface. Both cords are generally affected at once, inflammation of only one at a time being comparatively rare. Inflammation of moderate intensity is marked merely by vascular injection; in the more severe forms *swelling* is also observed. The inner margins of the cords are then more rounded, less sharply defined than normally, and their mobility is impaired, from loss of power in the inflamed intra-laryngeal muscles.

Inflammation of the parts within the larynx is occasionally attended by desquamation of the superficial layers of the epithelium and the formation of superficial catarrhal ulcers, particularly on the edge of the epiglottis, on the aryteno-epiglottidean folds, and on the vocal cords. The inflamed parts are generally coated with mucous secretions, which are often drawn out into fine viscous threads, especially between the vocal cords during their respiratory movements.

Chronic Catarrh of the Larynx.

(Chronic Laryngitis).

This affection may be primary, that is, it may be developed out of an acute catarrh, or may be simply chronic in its course from the outset; or it may be secondary, appearing as a complication in destructive diseases of the larynx; or it may be of the nature of a local manifestation of some other disorder, such as syphilis or pulmonary phthisis. It is distinguished laryngoscopically from the acute form of the affection by the less bright, dirty greyish-red colour of the inflamed parts; as in acute catarrh, however, the intensity of this coloration varies from light to dark red. Like acute laryngitis, also, chronic laryngitis sometimes involves uniformly the whole of the laryngeal mucous membrane, while at other times it is confined to certain parts, such as the epiglottis, the arytenoid cartilages, the superior and inferior vocal cords, or occasionally even to one of the true vocal cords. As marked differences are observed in the degree and distribution of the swelling as in the intensity of the inflammatory redness.—Round, superficial ulcers are more common in chronic than in acute catarrh.

Croup of the Larynx.

Laryngoscopic examination is seldom called for in laryngeal croup, the symptoms of the affection being so characteristic and such as to define it so clearly from other diseases of the larynx. Apart from the painfulness of the proceeding, it is scarcely likely that any attempt to explore the larynx in this way would be successful, as croup usually occurs in children of 2—7 years of age. In such cases as have been examined the false membranes were seen, accompanied by thickening and diminished mobility of the vocal cords and consequent stenosis of the larynx.

Diphtheritis of the Larynx.

Diphtheritis is rarely developed exclusively in the larynx; it generally begins in the pharynx and on the tonsils, and from these parts spreads downwards.

Very young children, who are most frequently attacked by laryngeal diphtheritis, can very seldom be subjected to laryngoscopic examination; the affection, however, can usually be diagnosed without it, as we know from experience that symptoms of stenosis of the glottis (crowing and prolonged inspiration), and hoarseness or aphonia, when they present themselves along with diphtheritis of the pharynx, are always due to an extension of the disease to the larynx. Even when the pharyngeal diphtheritis is wanting the above-mentioned indications, when observed in young children in districts in which diphtheritis is prevalent in an epidemic form, generally warrant one in assuming confidently the diphtheritic nature of the laryngeal affection.

Phthisis of the Larynx.

Pulmonary phthisis is very often accompanied by more or less extensive laryngeal disease, which may take any of the many forms to which the larynx is subject, from simple catarrh to ulceration and destruction of tissue.

Phthisical laryngeal catarrh is in no respect different in appearance from ordinary primary catarrh.—*Inflammation of the submucous tissue* adds considerably to the gravity of the disease; when this takes place the mucous membrane becomes not only hyperæmic but thickened, thrown into folds, covered with irregular rounded prominences (like those so often seen in the pharynx), and occasionally markedly œdematous.—As the phthisical disease advances the surface of the larynx is very frequently broken by *ulceration*. Ulcers of this kind may be solitary or multiple; when crowded close together they may coalesce and form one large ulcer. While they may occur in any part of the larynx they are more often met with on its posterior wall and on the epiglottis,—most often of all, however, on the *vocal cords*, usually both. The ulcerative process may attack only the superficial tissues or extend also to the deeper layers. The cords, when ulcerated, are generally reddened and swollen, and seldom of their natural colour and structure. If the loss of tissue be considerable and the ulcers be situated on the inner border of the vocal cords, the latter have a notched appearance, and when, during phonation, they are drawn

together, slight irregularities are observed in the outline of the rima glottidis. In extreme cases one or other of the vocal cords may be almost totally destroyed. Laryngoscopically the loss of substance occasionally seems greater than it really is: thus, all that is sometimes seen of the vocal cords is a narrow ulcerated border; but this diminution in size is to a great extent merely apparent and caused by the undue prominence of the swollen superior vocal cords, which then conceal the true cords situated beneath them. If both vocal cords be deeply hollowed out by ulceration, closure of the glottis may be very incomplete during phonation; a gap of greater or less size will remain between the cords.—Phthisical ulcers of the vocal cords have exactly the same *shape* as ulcers due to any other cause. They are irregular and indented at the edges; if very superficial and perhaps also covered by clear tough mucus they are very difficult of detection with the laryngoscope, but when the mucus is removed, as by coughing, their dull greyish-white colour enables the observer to recognise them at once. Ulcers of greater depth or which cover a larger surface, are seen very readily and are often coated with purulent secretion.

The above-described forms of phthisical disease of the larynx are in general scarcely distinguishable, by their laryngoscopic characters, from the same forms of primary laryngeal disease. Very frequently the phthisical nature of the laryngeal affection is doubtful till the diagnosis is confirmed by the discovery, on examining the chest, of phthisis of one or both lungs. But the larynx may be the seat of true phthisical disease at a period when the physical signs of such an affection are still wanting in the lungs. In these circumstances the following points may be held to indicate, with considerable constancy, the phthisical or non-phthisical origin of the laryngeal disease; simple catarrh of the larynx disappears spontaneously, as we learn from daily experience, in a very short time, on the adoption merely of a few simple precautions; phthisical catarrh, on the other hand, is very rebellious to treatment and shows a great tendency to relapse. Phthisical ulceration in particular obstinately resists all therapeutical measures and tends rather to spread and to deepen, while catarrhal, non-phthisical ulcers usually heal very rapidly.

The order in which the various affections of the larynx appear in phthisis bears no fixed relation to the progress of the disease in the lungs; in many cases they are absolutely wanting throughout the whole course of the pulmonary phthisical disorder. On the one hand, a very advanced lung affection may be associated with simple catarrh or slight ulceration of the larynx; or on the other, the ulcerative process may rapidly extend, there may be considerable loss of sub-

stance of the vocal cords, denudation of the arytenoid cartilages, &c., while the pulmonary disorder is still in a comparatively early stage.

Syphilis of the Larynx.

As in phthisis, so in syphilis, every variety of laryngeal affection is observed.

Syphilitic catarrh of the larynx and *syphilitic inflammation of the submucous tissue*, occur generally in the same parts and present precisely the same appearances as the simple, primary or phthisical inflammations. No specific character therefore can be assigned to these affections till other signs of syphilis are discovered (in the fauces, skin, &c.).

Syphilitic laryngeal disorders, when they have lasted some time, are invariably complicated by the formation of *ulcers*. These lesions are found most commonly on the vocal cords, next most frequently on the epiglottis, especially on its free borders, and more rarely on the posterior wall of the larynx. They are distinguished from catarrhal ulcers, which are generally formed very rapidly, by their slow rate of development; laryngoscopically, however, they often offer no sign which indicates positively their syphilitic nature. In some cases, nevertheless, syphilitic ulcers differ from those of catarrhal or phthisical origin in being more nearly circular in form, in the fatty or lardaceous appearance of their floor, and in having projecting and sharply-defined edges.

The healing of the ulcers under antisyphilitic treatment is naturally the surest proof of their syphilitic character. They heal by cicatrization; where therefore such cicatrices are observed at various points within the larynx it may be assumed with almost perfect certainty that the ulcers which preceded them were syphilitic, as phthisical ulcers, which are practically the only lesions from which they need to be differentiated, as a general rule show no inclination to heal. *Cicatrices* of any great magnitude in the neighbourhood of the *glottis* give rise to deformities and impairment of the mobility of the vocal cords, and to a form of *stenosis of the rima glottidis*, which in certain cases (I have seen one such) may become so extreme as to demand the performance of tracheotomy. If from neglect, or because their syphilitic nature was not recognised, the ulcers do not heal, they may in their further progress produce the most widespread destruction

of the various parts of the larynx, denudation and erosion of the cartilages (the epiglottis, in particular, being sometimes reduced to an irregular, shapeless mass), and destruction of the vocal cords so extensive that only a few almost unrecognisable remnants of them may be left.

It has been placed beyond doubt, by some careful observations, that syphilitic gummata are occasionally, though rarely, developed in the larynx. They may occur in any part of the larynx, especially in those parts situated above the glottis, in the form of circumscribed tumours, sometimes solitary, at other times present in numbers, and varying in magnitude from the size of a pin's head to that of a pea; or the gummatous matter may be diffused in the tissues, and so give rise to irregular nodulation or wrinkling of the surface. When solitary they are rounded in shape, and in aspect are sometimes yellowish, or of exactly the same colour as the rest of the mucous membrane. The difference in colour depends on the stage which the gumma has reached: in the first stage, that of infiltration (inflammatory swelling), the part is red; in the second stage, that of softening, the yellow colour begins to show itself. If the morbid material be absorbed a depression or a cicatrix is formed, or if it break up and become disorganized ulceration takes place (Scheele, &c.).

Perichondritis of the Larynx.

Perichondritis, with the subsequent accumulation of purulent exudation beneath the perichondrium, the eventual escape of the pus and denudation and necrosis of the cartilage, may attack any of the cartilaginous structures which form part of the larynx. Perichondritis of the larynx is generally a secondary, rarely a primary affection, and very often follows phthisical and syphilitic laryngitis, the ulcerative process so begun extending to the deeper tissues; not unfrequently it appears in the course of severe acute diseases, particularly typhus, sometimes also in diphtheritis of the larynx and small-pox.

Until the pus collected between the cartilage and perichondrium has forced its way through the latter structure the signs discoverable by the laryngoscope do not enable one to make the diagnosis with any degree of confidence. At those parts at which the abscess is forming there is observed a firm, dark red prominence, surrounded by inflammatory swelling and projecting into the cavity of the larynx, often producing in this way a considerable degree of laryngeal stenosis; but it must be remembered that a moderately acute inflammation of the submucous tissue,

particularly if developed with great rapidity, may present precisely the same laryngoscopic appearances.

Perichondritis often attacks the posterior portion of the *cricoid cartilage*, from which it rapidly extends to the other cartilages, especially in typhoid fever; if suppuration supervene and an abscess be rapidly developed, laryngeal stenosis and the phenomena of threatening suffocation are produced. The occurrence of perichondritis cricoidea in typhoid fever is usually readily diagnosed on taking into consideration the whole course of the disease in the case in hand; laryngoscopically, also, it is generally easily recognised by the firm prominent tumour which projects downwards from the posterior wall of the larynx.

Perichondritis of the *thyroid cartilage* seldom occurs primarily (except after injuries), but as a rule secondarily, in connection with the morbid conditions mentioned above. On the whole it is rarer than perichondritis of the cricoid cartilage. It may be unilateral or bilateral, strictly circumscribed or spread over a comparatively large area. If the inflammation have its seat on the outer surface of the cartilage the diagnosis is easy; most commonly however it takes place on the inner surface, being often limited exactly to the thyroid notch, when phthisical ulceration at the anterior angle of junction of the vocal cords extends to this part. Perichondritis confined to the thyroid notch is not recognisable by laryngoscopy. As it is also usually preceded or accompanied by other diseases of the larynx (inflammatory swellings, ulceration) the laryngoscopic appearances vary with the intensity and distribution of these morbid processes.

Perichondritis of the *arytenoid cartilages*, usually of both, is the most common form of the disease, and is often observed alone, unassociated with any affection of the other cartilages. In most cases it is of syphilitic or phthisical origin; in phthisis, particularly, when the laryngeal disorder has lasted some time, the ulceration frequently extends to the arytenoid cartilages and partially or totally destroys them.—In perichondritis of one of the cartilages, before the pus formed has escaped and whilst nothing is yet to be seen but swelling of the cartilage, the appearance of the parts is in all respects the same as that presented in cases of swelling of their submucous tissue, such as is so often met with in simple laryngitis. In the affection under consideration, however, the mobility of the cartilages and of the vocal cords of the same side is somewhat diminished, which is the more striking as the cartilage of the opposite side is healthy and freely movable, whilst in simple swelling of the mucous covering of the arytenoid cartilage the movements of the part are but very slightly restricted.—When the pus escapes the cartilage lies exposed; if the denudation be merely partial and circumscribed it may be completely concealed from view by the swelling of the surrounding soft parts; but if no such swelling is present, and the cartilage be separated from its connections by the destructive process, there is produced a deep depression which occupies the place of the destroyed cartilage, a change which is particularly noticeable when the corresponding vocal cord is intact.

The various forms of ulceration or necrosis of the cartilages of the larynx,—simple, syphilitic or phthisical,—are indistinguishable from each other by their laryngoscopic characters alone; the differential diagnosis rests solely on the ascertained nature of the coexisting general affection.

Œdema of the Larynx.

Œdema of the larynx may be either partial and circumscribed or may involve many of the laryngeal structures. It is most marked at those parts at which the submucous tissue is most lax and most capable therefore of accommodating a large amount of dropsical effusion: these parts are the aryteno-epiglottidean ligaments, the arytenoid cartilages, the posterior surface of the larynx, and the epiglottis. The œdematous swellings present a light yellow or pale reddish coloration, which is strikingly different from the deep redness of the tumefaction due to simple inflammation.

The severer forms of œdema give rise to such intense dyspnœa that careful laryngoscopic examination becomes impossible, and the swelling of the epiglottis also, which is seldom wanting in these cases, is usually so great that the intralaryngeal structures are completely hidden from sight. If the epiglottis be highly œdematous its swollen condition may usually be observed without the aid of the laryngeal mirror, by simply depressing the tongue, as in such circumstances it rises towards the base of the tongue; the tumefaction is also always easily detected by introducing the finger and passing it over the parts. A high degree of œdema of the intralaryngeal structures, particularly of the superior or inferior vocal cords, or of the aryteno-epiglottidean ligaments,