Congenital syphilis of the throat : based upon the study of one hundred and fifty cases / by John N. Mackenzie.

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CONGENITAL SYPHILIS OF THE THROAT;

BASED UPON THE

STUDY OF ONE HUNDRED AND FIFTY CASES.

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Isolated cases of laryngeal lesions in congenital syphilis are to be found scattered here and there through medical periodicals; but systematic writers have either entirely ignored the subject, or referred to a few recorded cases as pathological curiosities. The universal sentiment of authority is decidedly adverse to the frequent implication of the larynx, and the changes in the voice are referred to the intervention of fortuitous catarrh.

From a careful investigation of the subject, which has served only to strengthen conviction, I believe: *that laryngeal disease is not rare in congenital syphilis; that it is one of the most constant and characteristic of its pathological phenomena; and that we may look for invasion of the larynx with as much confidence in the congenital, as in the acquired form of the disease.*

Through the courteous invitation of the President, Mr. Hutchinson, I was enabled to express this view, April 6th, 1880, at the Pathological Society of London.

We occupy to-day the same position that we did not many years ago, in regard to the laryngeal manifestations of acquired syphilis; and, indeed, we may find the historical parallel of this question in the development of our knowledge in almost every other department of laryngeal pathology.

Formerly laryngeal disease in constitutional syphilis was regarded as a

pathological curiosity, and it is only within a comparatively recent period that our views upon this subject have undergone a radical change. Distinguished authority[1] affirms that "the majority of cases of chronic laryngitis which we meet with are syphilitic."

I believe that laryngeal lesions have not been found more frequently, simply because they have not been sought. This arises, first, from the acknowledged difficulty of laryngoscopic examination in children; secondly, from the fact that the laryngoscope is still in the hands of the few; thirdly, and mainly, from imperfect post-mortem investigation.

Systematic examination of the larynx during life would greatly facilitate the future study of the disease. Although beset with difficulties, they are not insurmountable, and may often be overcome by a little tact and patience. I have been enabled to make a satisfactory laryngoscopic diagnosis in a child eight months old, and Schrötter[2] has succeeded in an infant two months younger.

Cases have been met with in which aphonia has existed, and yet nothing discovered to account for it at the autopsy. But we must remember that the post-mortem appearances of the larynx, especially as regards its vascularity, are often different from those observed during life; a truth which finds its explanation mainly in the histology of the laryngeal membrane. It sometimes happens in those who have died of laryngeal œdema to find no trace of that condition at the necropsy, and this fact has led some to overlook the frequency of the complication as the immediate cause of death in renal disease. We should therefore hesitate to accept the negative evidence of post-mortem examination as an absolute proof of the absence of lesions during life. On the other hand, the absence of symptoms referable to the larynx should not justify neglect in its examination after death. Every throat specialist must know to what extent this organ may be involved, without decided impairment of function. Cases are not wanting in which extensive disease exists, without dyspnœa, change in the voice, or other symptoms of laryngeal disorder. The greater number of patients consult the general practitioner and surgeon, and comparatively few come under the observation of the laryngoscopist; and hence in the works of the latter we find but trivial allusion to the subject.

In judging of the absolute frequency of these lesions, we should bear in mind the great mortality of congenital syphilis, the vast majority dying at an early stage, before pronounced laryngeal changes can develop. This, together with the prophylactic effect of treatment, tends to lead us into error.

If the aggregate number of cases of constitutional syphilis be taken, the proportion in which deep laryngeal ulceration exists is comparatively

[1] Wilks and Moxon, Pathological Anatomy, Lond. 1875, p. 301.

[2] Monatsch. für Ohrenheilkunde, 1879, No. 11.

small. Hence we should expect a relative infrequency of malignant laryngeal inflammation in the congenital form of the disease.

There is every reason to believe that these inflammations have been confounded with simple and fibrinous laryngitis and their dependence on syphilis overlooked. There are some who maintain that the laryngitis of congenital syphilis is nothing but a simple, fortuitous catarrh. Upon this hypothesis, it will be difficult to explain the constancy of the condition, and its control by mercury after other means have failed.

That the larynx should be frequently attacked, follows, *à priori*, from its known susceptibility to invasion in childhood, during the course of those diseases which are analogically allied to syphilis. On anatomical and physiological grounds, too, and in view of its connection with the pharynx which is so often the seat of inflammation, we should look for its frequent implication. Given, then, an organ with known proclivities to infection, anatomically and physiologically predisposed to disease, and nourished by a vitiated blood; and given a more or less complete abrogation of nasal respiration, and the inhalation, therefore, of an atmosphere cold, dry, and charged with impurities, and we have all the conditions necessary to initiate inflammation and awaken the events of syphilis.

The aim of this paper is to invite attention to the throat as a frequent seat of the lesions of congenital syphilis. The following description of the mode of occurrence, natural history, and characters of the disease, is the outcome of an analytical study of 150 cases of throat syphilis of congenital origin. This collection is made up of patients coming under personal observation in the Throat and Children's Hospitals of London, together with examples and morbid specimens which I have been enabled to examine through the kind invitation of medical friends. To these has been added all cases available to me in the scattered literature of the subject.

Lesions of the Pharynx. *Superficial Pharyngitis.*—The fauces, velum, and posterior pharyngeal wall, present simply an erythematous efflorescence, or are the seat of lardaceous infiltration. The posterior wall is often covered with muco-pus from the nose and nasopharynx, upon the removal of which, it offers a deeply injected, glazed appearance. Enlargement of its follicles is sometimes observed. I have seen follicular inflammation which seemed to depend upon a syphilitic cause. The follicles stood out prominently from the wall of the pharynx, were greatly swollen, and filled with a yellowish secretion, and their circumference was surrounded by a well-defined inflammatory areola. They varied greatly in size, the largest having about the diameter of a mustard seed. The condition disappeared in two weeks under "mixed treatment." Bärensprung[1] relates a case where they appeared as white knobs of variable dimensions projecting from the posterior wall. Although mucous patches

[1] Die Hereditäre Syphilis. Berlin. 1864. S. 130. Cases of inflammation and ulceration of the larynx are referred to by this author.

are frequently found on the uvula, tonsils, and faucial pillars, the posterior pharyngeal wall is singularly exempt, and Trousseau[1] states that they are never found in this part of the pharynx. Fournier[2] has seen an ulcerated tubercle of the posterior part of the pharynx, and Homolle[3] reports a case of congenital syphilis in which the back of the throat was red, granular, and inflamed, and presented a large prominent papule of a rosy color. The patches in the fauces resemble those found in the adult in physical characters and tendency to relapse; but they are rarely symmetrical, and seem to have a greater tendency to ulceration, the resulting ulcers sometimes being almost identical in appearance with the tertiary destruction of acquired disease.

Hypertrophy of the tonsils is present in a large proportion of cases. It is simple in character, or the glands may be the seat of lardaceous infiltration. In the latter case, they have a square outline, and a uniform, smooth, waxy appearance, in which it is difficult to recognize the mouths of the follicles and lacunæ. They are often adherent to, or fused with, the pillars of the fauces. In the case of follicular pharyngitis referred to above, they were the seat of a like condition, which disappeared with the pharyngeal affection.

Warty growths are found in the pharynx, which resemble those met with in the larynx, and which depend upon chronic vascular congestion, or may follow the cicatrization of ulcers. They are said[4] to be of not uncommon occurrence, and to be found "chiefly on the hard palate and back of the tongue, and at that stage when keratitis occurs. They are usually multiple, large, and sessile." Hüttenbrunner[5] found them at the base of the tongue, and Bryant[6] describes a warty growth upon the tongue of an infant six months old, the subject of congenital syphilis.

A case of sarcoma of the pharynx and upper jaw simulating nasopharyngeal polypus is recorded by Mr. Spencer Watson;[7] but its dependence on congenital syphilis does not follow from the account given by the author.

With deep ulceration of the pharynx stomatitis is commonly associated. The gums, palate, and buccal surfaces are thickened, infiltrated, and present a characteristic albuminous appearance. On this pale ground ramify arborescent, wine-coloured vessels, and here and there small hemorrhages are seen beneath the mucous membrane. There is often a scarlet line along the gums at the insertion of the teeth, which stands out in striking contrast to the surrounding pallor of the parts. This is most likely de-

[1] Clinique Médicale de l'Hôtel Dieu, tome iii. p. 300.
[2] De la Contagion Syphilitique. Paris, 1860, p. 11.
[3] Des Scrofulides Graves, etc. Thèse de Paris, 1875, p. 116.
[4] Brit. and For. Med.-Chir. Rev., 1875, vol. ii. p. 29.
[5] Jahrbuch für Kinderheilkunde. N. F. Bd. v., 1872, xx. p. 338.
[6] Surgical Diseases of Childhood. Letts. Lect., 1863, p. 83.
[7] Med. Times and Gazette, 1875, vol. ii. p. 388.

termined by the carious condition of the teeth, and may be analogous to the inflammatory zone which surrounds other syphilitic lesions.

Dr. Morell Mackenzie has called my attention to the absence of the characteristic notching of the teeth in those in whom the throat is affected. Out of seven cases examined with reference to this point, there were three in which this condition was not present. In one of these, there was a deficiency in the left central upper incisor, giving it a more or less V-shaped appearance, and in another, a roughening of the lateral edge of the lower central incisor of the right side. In the third, the teeth were apparently sound.

Deep Destructive Ulceration.—It is generally laid down in the text-books that deep ulceration of the mouth and pharynx in congenital syphilis is very rare, and Mr. Holmes[1] goes so far as to say that the affection of the palate, so common in syphilis of the adult, is "so rare in children that it is doubtful whether the few cases which occur in infants during syphilis may not be mere coincidences." A great deal of obscurity prevails concerning these palato-pharyngeal ulcerations in consequence of a persistent adherence to the old superstition that refers them indiscriminately to scrofula. Its aid has been invoked to explain these lesions of the throat, and much valuable time has been expended in the attempt to establish their alleged correlation. It is hard to free the mind from the trammels of traditional error, and authors are too prone to find in struma the *ultima thule* of their investigation. But an advanced pathology is teaching a different lesson, and has begun to alienate from the embrace of scrofula many of its so-called characteristic phenomena, and to assign them to definite, tangible causes.

The doctrine that ascribes them to struma, promulgated in 1844 by Hamilton,[2] has found, especially during the past fifteen years, some stout advocates in France. Monographs and essays have emanated from the French school, supporting their scrofulous origin, and "L'Angine Scrofuleuse de la Gorge" is the popular theme for the graduation thesis. But an examination of the subject shows that syphilis, tuberculosis, and lupus are ascribed indiscriminately to scrofula. Apart from these diseases, which are distinct from struma, there is no reason to believe in an ulcerative scrofulide of the throat. The identity of that form of ulceration, which is neither tubercular nor the result of lupus, with syphilis, follows from the negative evidence of their duality, and the positive fact of their pathological unity. The transmission of syphilis as scrofula is the unscientific and illogical refuge that is sought to avoid the specific nature of lesions which present all the features of syphilis, and in which no reflex of scrofula is found.

[1] Surgical Treatment of the Diseases of Children. Lond. 1868, p. 350.

[2] Dublin Journ. of Med. Sci., vol. xxvi. p. 282 et seq.

Excluding, therefore, lupus, tuberculosis, and other rare forms of ulceration not necessary to discuss here, deep palato-pharyngeal destruction in children is nearly always the result of syphilis. It is impossible to exaggerate the part allocated to congenital syphilis in the evolution of these lesions; and we may say with Van Buren and Keyes,[1] that "such a condition of the throat is always the result of syphilis, never of scrofula, or so rarely that the word never is allowable."

This question, however, is not one of purely pathological interest; it involves imperative obligations in the treatment of these ulcerations for which the surgeon will be held responsible. Under a misconception of its true nature, syphilis, uncontrolled, will lead to destruction and deformity, and influence for evil the future happiness and usefulness of the individual.

Deep ulceration may invade the bucco-pharyngeal cavities at any period of life from the first week up to the age of puberty, those cases occurring at the latter period, and afterwards, being generally forms of tardy development. Out of 30 cases analyzed with reference to the period of invasion, 14 occurred within the first year, a proportion of nearly one-half, and of these, 10 within the first six months. Whitehead[2] has observed putrid ulceration of the throat in an infant three days old. Of the remaining cases, the majority occurred at a period more or less advanced towards puberty. It is an accepted fact that syphilis may lie in a state of potential activity within the system for many years after birth. Lying thus quiescent, it seems to await the advent of some physiological epoch to call its phenomena into activity. Thus puberty, and its surrounding years is often selected as the chosen period of its outbreak. It would be interesting to pursue this subject further, and trace the possible influence of the menopause in the evolution of these tardy forms of syphilis. When the eruption of the disease is thus delayed, it is on the palate, and in the pharynx, that it most frequently makes its appearance, and deep palato-pharyngeal ulceration often first attracts attention to the existence of a diathesis of which it is the sole pathological expression. Lesions of these structures are found with a peculiar constancy, and upon them syphilis apparently concentrates all its energy and exhibits most of its virulence.

Gross[3] has called attention to the deep ulcerations of the throat, palate, and nose in those exceptional cases of congenital syphilis where life is prolonged until after puberty; and Atkinson[4] has laid stress upon the tendency of tardy syphilis to attack the pharynx and fauces, the bones of the hard palate and nasal cavity and contiguous parts.

[1] Dis. of the Genito-Urinary Organs and Syphilis, 1874, p. 599.

[2] On the Transmission from Parents to Offspring of some Forms of Disease. Lond. 1851, p. 137.

[3] System of Surgery, 1872, vol. i. p. 345.

[4] American Journ. Med. Sci., vol. lxxvii., 1879, p. 71.

Sex.—Females are attacked more frequently than males in the majority of instances. Out of 69 cases of pharyngeal ulceration, 41 occurred in females.

That these cavities should be frequently attacked, is easily understood, if we reflect upon their great vascularity, and the necessary irritation to which they are constantly subjected.

Ulceration may occur in any situation, but its favourite seat is the *palate* and especially the hard palate, for which it manifests the closest elective affinity. When ulceration occurs at the posterior part of the hard palate, the tendency is to involve the soft palate and velum, and thence to invade the nasopharynx and posterior nares. Seated anteriorly, it seeks a more direct pathway to the nose which is established by perforation of the bone.

Simultaneous or consecutive ulceration of the palate, pharynx, and nose seems to be characteristic of syphilis.

The next most common seats of ulceration, in their order of frequency, are: the fauces, the nasopharynx, the posterior pharyngeal wall, the nasal fossæ and septum nasi, the tongue and gums. Zeissl[1] states that he has never seen ulceration of the nasopharynx and posterior pharyngeal wall, whilst according to Dron,[2] Horand,[3] Chaboux,[4] and Mauriac,[5] the nasopharynx is its most frequent seat; and Bumstead[6] regards the posterior pharyngeal wall as a favourite seat of the gummy tumour. I have met with ulceration of the nasopharynx twice, and have lately seen a boy, with Dr. Whistler, in whom this cavity was practically obliterated by cicatricial bridles, precluding respiration through the nose. The adhesions were successfully divided with a galvano-cautery knife devised by Dr. W., and the obstruction to nasal respiration completely removed. Ulceration of the posterior pharyngeal wall is not uncommon. It was present in two cases under my observation, and in four adhesion had taken place between the pharynx and posterior pillars of the fauces. Similar examples have been recorded by others, which will be alluded to later on.

A peculiarity of these ulcerations, and especially those of the palate, is their *centrality of position.* They are generally found in the median line of the vault, at the junction of the palatal processes of the superior maxillæ, and the area of destruction on either side is equal and symmetrical.

Often more acute in their development, and advancing with more rapid strides than in the tertiary syphilis of the adult, *the special tendency of these ulcerations is to attack the bone and eventuate in caries and necrosis.* Disorganization of the bone occurs in over three-fifths of recorded cases. The great vascularity of the periosteum and medullary membrane in youth

[1] Lehrbuch der Syphilis. Bd. II., 1875, S. 323.

[2] Bull. de la Soc. Nat. de Méd. de Lyon., 26 juin, 1876. [3] Ibid.

[4] De Certaines Lésions de la région Nasopharyngienne, etc. Thèse de Paris, 1875, p. 43.

[5] De la Syphilose Pharyngo-Nasale. Paris, 1877, 6me leçon, p. 54.

[6] Pathology and Treat. of Ven. Dis. Phila. 1879, p. 753.

doubtless invites invasion of the osseous structure. This, however, is contrary to the experience of Colles,[1] who has never seen a case, West,[2] who has only seen necrosis once, Holmes,[3] who has seen sloughing of the soft palate, but not excavated ulcers of the tonsils or caries of the hard palate, and Cooper Forster,[4] who has never met with an example in which syphilis had advanced to disease of the bone.

This tendency to necrosis exists at all periods of life; but especially in early youth, at which period it is more destructive and less amenable to treatment. When these ulcers are situated upon the hard and soft palate, *perforation* of these structures follows in very nearly one-third of the cases. Thomas Williams[5] has attempted, though unsuccessfully, to draw a distinction between what he calls "Perforating Ulcer of the Throat," and the tertiary perforation of syphilis; and Homolle[6] has described the same condition under the title of "Echancrure Marginale, et Ulcère Pérforant," which he attributes to a scrofulous cause.

As a rule, these ulcerations originate upon the palate or within the pharynx; but they are occasionally consecutive to deep, ulcerating syphilides of the nose and face. Whatever their point of departure, the palate is usually the structure upon which the destructive process ultimately descends.

Thus we have seen that the palate, pharynx, and nose constitute a well-defined pathological territory, singularly obnoxious to these ulcerative products, and within whose confines we may best study the development and growth of these degenerate forms of syphilis.

Ulceration of the tongue occurs in a certain proportion of subjects. I have seen three cases. In the first the ulcer was situated on the right side of the tongue near its tip; in the second, in the left glosso-epiglottic fossa; and the third followed the breaking down of a large gumma on the upper surface of the organ near its base.

Holmes[7] describes and figures a large ulcer of the tongue, with grayish floor and hard elevated edges, which followed ulceration of the fauces, and which healed rapidly under potassium iodide. Cicatrices of old ulceration have been observed by Casati.[8] In the three cases referred to there was laryngeal and pharyngeal ulceration.

The ravages of the disease present the typical appearances that are found in the tertiary syphilis of the adult. Accordingly we find the ulcers of a more or less circular or oval form, with a deep base of grayish or lardaceous appearance, with elevated, well-defined, and often bloodshot walls, surrounded by a deep zone of inflammation, and covered with a foul,

[1] Ven. Dis., Lond. 1837, p. 271.
[2] Surgical Treatment of Diseases of Children. Lond. 1868, p. 351.
[3] Lect. on Dis. of Child., p. 747.
[4] Surgical Diseases of Children. Lond. 1860, p. 291.
[5] Brit. Med. Journ., 1862, vol. ii. p. 66.
[6] Op. cit.
[7] Op. cit., pp. 357–358.
[8] Annales de Dermatologie et de Syphiligraphie, tome iv., 1872–73, p. 218 et seq.

dirty, yellowish secretion, which imparts to the breath the peculiar odour of syphilitic pharyngeal ulceration, which, according to Van Buren and Keyes,[1] "is itself suggestive if not pathognomonic."

The appearance of the ulcer will vary to a certain extent with the general condition of the patient. In a badly-nourished, cachectic child the granulations may assume a pale, unhealthy, and indolent look, and the red corona may fade into a purplish ring, or even be entirely wanting. But in all there is a strict adherence to the true syphilitic type; in all we can recognize the portraiture of syphilis.

Following cicatrization, adhesion of the velum to the pillars of the fauces, adhesion of the latter to the pharyngeal wall, stenosis and obliteration of the pharynx and nasopharynx; in fine, all the sequelæ are found which follow constitutional syphilitic ulceration in these localities.

Œsophagus.—Although the constant irritation to which the œsophagus is subjected by the gravitation of purulent secretion from the nose, and its carriage thither by the movement of deglutition, determines a condition of chronic congestion and hypersecretion of its follicles, well pronounced lesions of this organ are very rare. Nature seems to afford a certain amount of conservative protection which guards it against the more destructive forms of syphilis. This is interesting, in view of the fact pointed out by Billard,[2] that the œsophagus in young children is the seat of an habitual congestion, more or less considerable, and hence a tendency exists to inflammation and disorganization.

Extreme pallor, associated with minute ecchymosis, is sometimes observed. Köbner[3] found the lower third of the organ the seat of softening and cadaveric discoloration.

The popular idea that mucous patches descend into the œsophagus from the pharynx appears to have little foundation in fact, and the improbability of such an occurrence is rendered more impressive when we reflect that these patches are very rarely observed in the lower part of the pharynx, and never on the posterior wall. Billard[4] describes a case of œsophageal ulceration of uncertain origin, but which was probably syphilitic.

The subject was a little girl, æt. 6 days, who had a stifled cry, and who died of exhaustion. The post-mortem showed cicatrization at the base of the tongue, redness of the pharynx, tumefaction and redness of the glottis, with mucosities in the ventricles, streaked congestion of the trachea and bronchi, and hepatization of the right lung. The superior portion of the œsophagus was deeply injected, and presented a longitudinal ulcer six lines long by four in breadth, with a yellowish base, and thick, red, bloody borders. In its centre the mucous membrane was destroyed, and the cellular membrane exposed.

Reimer[5] has placed on record a most interesting example of congenital syphilis, in which there was perforation of the œsophagus.

[1] Op. cit., p. 599.

[2] Traité des Mal. des Enf. Nouveaux-nés à la mamelle, 1833, p. 304.

[3] Klinische und experimentelle Mittheilungen. Erlangen, 1864, p. 126.

[4] Op. cit., p. 307, Obs. 24.

[5] Jahrbuch für Kinderheilkunde, Bd. x. 1876, 98.

It occurred in a boy of 12, in whom there was redness and swelling of the tonsils, an indolent ulcer at the junction of the hard and soft palates, penetrating to the perichondrium, and another with lardaceous bottom and swollen, reddened edges on the under surface of the right turbinated bone. In the middle of the neck was also an ulcer, surrounded by lardaceous infiltration and enlarged glands, from which there issued a constant dirty and sanious discharge. There were gummy deposits in the surrounding muscles. This ulcer was found, on post-mortem examination, to communicate with the œsophagus in the vicinity of the cricoid cartilage by a sinuous callous tract. The œsophageal opening presented an elevated, everted edge, and the mucous membrane in its neighbourhood was reddened and swollen, and the seat of very large grayish granulations. Further on the membrane became paler. There was no dysphagia, but great emaciation during life.

Lesions of the Larynx.—The laryngeal lesions of congenital syphilis are constant and characteristic, and play an important rôle in the pathological evolution of the disease. Often amongst the first events of its clinical history, they may rapidly terminate in death, or stealthily advance, inaugurating progressive morbid changes, which, at first temporarily controllable, ultimately become inveterate. And thus the laryngeal inflammation may outlive the series of phenomena which mark the progress of the malady, witnessing their inception, course, and disappearance, itself alone rebellious to the approaches of the treatment by which they have been controlled or dissipated.

The larynx may be involved at any, but usually at an early, epoch. Monti[1] states that he has twice seen laryngeal syphilis which arose during intra-uterine life. The most common period of invasion, however, is the first six months after birth. Out of 76 cases of laryngitis, 53 occurred within the first year; and of these, 43 within the first six months, 17 within the first month, and 4 within the first week of life. *Age*, therefore, exercises a predisposing influence upon the eruption of the disease in the larynx. This applies not only to the superficial changes, but also to those malignant forms of laryngeal destruction which the pathologist occasionally encounters.

The laryngeal affection is met with much more frequently in the female than in the male sex, in the proportion of three to two. Laryngitis develops at all periods of the year, without regard to season, although it is naturally aggravated by those atmospheric changes which determine catarrhal conditions.

Imperfect nutrition and forced neglect of hygienic laws sufficiently explain its prevalence among the children of the poor.

The *classification* of the laryngeal lesions of congenital syphilis into secondary and tertiary will not obtain as in the case of acquired disease. Their pathological evolution is not governed by the same laws that regulate the eruption of syphilis in the adult larynx, nor can we predicate, in any given case, the order in which they will appear. In some, not a few, the deeper destructive forms are the first indication of laryngeal mischief.

[1] Phila. Med. Times, April 28, 1877, p. 336.

This irregularity in their clinical history practically precludes such a chronological division.

In congenital syphilis we may distinguish two principal varieties of laryngeal inflammation. In the one, the changes are limited to the mucous membrane and submucosa; its processes are essentially chronic, and there is little tendency to invasion of the deeper structures. The other is characterized by deep ulceration of an extremely acute nature, which, especially in early life, rapidly involves the cartilages and their envelopes, and constitutes the most frightful form of the disease. In addition to these, there is a third form, in which a gradual deposit of dense fibrous material takes place within the tissues of the larynx, and leads to contraction of its lumen.

These pathological facts justify a classification, based upon the anatomical seat of inflammation. Their separation accordingly into *superficial*, *deep*, and *interstitial*, would be much less arbitrary, and would avoid the confusion which the terms secondary and tertiary involve.

Chronic superficial laryngitis is the condition most frequently met with. It is limited to the mucous membrane and submucosa; is essentially chronic; runs a definite course; gives rise to well-defined changes in the larynx, and may be divided into three stages. The first, or stage of *hyperæmia*, presents nothing diagnostic; the redness is generally diffuse, but is sometimes confined to special areas. It is commonly associated with congestion of the trachea, coryza, and erythema of the fauces and pharynx. Gradually, however, a condition of hypertrophy is developed in the laryngeal membrane, which becomes swollen, thickened, and infiltrated, constituting the second, or stage of *infiltration and hypertrophy*. If the larynx be examined now, its membrane will be seen to be deeply injected, and often slightly translucent from chronic inflammatory œdema. The epiglottis, ventricular bands, and arytenoids have a swollen, rounded appearance and the vocal cords are thickened, reddened, and their excursive mobility impaired. Swelling of the mucous glands sometimes occurs, but the secretion is generally scanty. These changes are occasionally limited to one side of the larynx. Thus, one-half of the epiglottis, its corresponding ary-epiglottic fold, and ventricular band become swollen and thickened, whilst the opposite side is in a state of simple congestion. If the throat be neglected, minute ulcers form by the liquefaction of the superficial portions of the mucous membrane, which partake at first more of the nature of erosions, but which, in long standing cases, involve the whole thickness of the membrane, and sometimes reach the cartilage. Arrived at this period or stage of *ulceration*, the affection becomes stubbornly rebellious to treatment. Under antisyphilitic medication the ulcers heal, it is true, and temporary relief is afforded; but sooner or later fresh ones appear in other parts, thickening and hypertrophy become progressive, and secondary changes are induced in the lungs, either by direct extension

through the trachea and bronchi, or as the result of a diminution in the calibre of the larynx itself.

As these ulcers heal there spring up at the periphery of the cicatrices minute, granular, papillary hyperplasiæ; and thus, later on, small areas are found decked with growths which mark the site of past ulceration. At the post-mortem, if the finger be passed over them, their rough granular nature will be at once perceived. These papillary outgrowths, which seem to flourish in a barren, cicatricial soil, are probably more common in the child than in the adult, and the same may be said of the ulcerations which precede them.

Such is the common history of this form of laryngitis. Commencing in early childhood, like an ordinary catarrh, for which it is often mistaken, it gradually but surely asserts its specific nature. To it is due the characteristic cry, and other symptoms referable to the larynx, so common in the early stages of congenital syphilis. The changes which have been described require time for their completion, months and even years elapsing before they reach their full development. Once established, it is doubtful whether the larynx ever returns completely to its normal condition.

From the fact that hoarseness and other laryngeal symptoms were present during the existence of mucous patches on the palate and in the pharynx, it was assumed by Diday[1] that they were due to the presence of these lesions within the larynx, in the neighbourhood of the ary-epiglottic folds. Czermak[2] and Türck[3] have each reported cases where they were seen with the laryngoscope; and one is referred to in the *Gazette des Hôpitaux*[4] where they were found in front of the arytenoids. The patches described by Czermak and Türck are, however, evidently examples of true ulceration, and the account of the laryngeal appearances in the child from the Hôpital Necker is too meagre to be of much value.

The *deep, destructive, ulcerative laryngitis* corresponds, in physical characters, pretty closely to the tertiary inflammation of acquired syphilis. It may follow the superficial form, but generally occurs independently of it. It is sometimes among the first symptoms of infection, and here is most destructive.

Casati[5] has seen deep laryngeal ulceration, caries, and perichondritis in an infant five days old.

Bumstead[6] says that "it remains for future observation to determine whether, in the course of hereditary syphilis, the larynx is primarily attacked, with or without attendant lesions of the pharynx;" and inclines

[1] Syphilis des Nouveaux-nés, New Syd. Trans., p. 64–65.
[2] Der Kehlkopfspiegel. New Syd. Soc., 1861, p. 53.
[3] Klinik der Krankheiten des Kehlkopfes, 1867, 161 Fall. and Atlas, xxii.—4.
[4] 1860, No. 51, p. 202.
[5] Op. cit.
[6] Pathology and Treatment of Ven. Dis., Phila. 1879, p. 754.

to the belief that the laryngeal affection is always secondary. As a rule, deep pharyngeal ulceration precedes, or coexists with, this form of laryngitis; but *deep ulceration of the larynx occurs, too, without the slightest evidence of pre-existing pharyngeal lesions. Laryngeal ulceration does not commonly follow the pharyngeal destruction of latent syphilis. Those palato-pharyngeal ulcerations which are found in tardy congenital syphilis have little tendency to invade the larynx; their future theatre of action is the nasopharynx and nose.*

The first stage of this form of laryngitis consists in a deposit of gummatous material in the structures which subsequently become the seat of ulceration. The resulting ulcers have the same appearance as those found in the tertiary period of constitutional syphilis, and lead to similar deformity and stenosis. They are single or multiple, symmetrical, or confined to one side of the larynx. Their most frequent seat is the *epiglottis;* they are often situated in the ventricles; less frequently on the upper and under surface of the vocal cords, the ary-epiglottic folds, ventricular bands, and plica meso-arytenoidea. They are also observed in the subglottic cavity.

There is a remarkable tendency in the laryngeal ulceration of congenital syphilis to destruction of the deeper tissues—the cartilages and their envelopes; and this predisposition is most marked in those in whom the throat is attacked at an early stage of the disease. There seems to be an inherent virulence in the process which finds in the imperfectly developed laryngeal structures a fertile field for the display of its destructive power. Chondritis, caries, and necrosis are found in over two-thirds of the recorded cases at all ages. Of these, over three-fifths occurred within the first year of life.

Chronic interstitial laryngitis is intermediate between the two inflammations already described, and is rarer than either; but is of considerable practical importance in view of its insidious tendency to stenosis. Much stress has been laid upon this condition in the adult by Dr. Whistler, who has often pointed out its existence and dangers at his clinique, and who describes it as the "Chronic Fibroid Laryngitis of the Tertiary Period." It consists essentially in a gradual deposit of a fibroid material in the tissues of the larynx, which leads inevitably to contraction of its lumen. In such a larynx an acute attack of ulceration is fraught with the utmost danger. These attacks, moreover, seem to favour a greater deposit of the fibrous tissue, and succeeding ulcerations increase proportionately the gravity of the case. In this variety of laryngeal syphilis, Dr. Whistler advocates early tracheotomy.

The following case came under my care while in charge of the clinique of Dr. Prosser James, during his absence from London, and I am indebted to him for permission to publish it. The comparative rarity of the affec-

tion, apart from other features of interest, will be sufficient apology for its quotation *in extenso* :—

Case I.—Henry S., æt. 10, applied at the London Throat Hospital, Oct. 8, 1879, suffering from alarming dyspnœa of a week's duration.

Father syphilitic. Mother has had sore-throat, rheumatism, and two miscarriages, but is otherwise healthy. Patient was small at birth, and was apparently healthy until about two months old, when he became fretful and peevish ; would cry out in the night, burrow his head in the pillow, and was frequently seized with general convulsions, during which he would contract his brows and hold his head backwards in a rigid position. There was no loss of consciousness in the convulsion. His head, which was notably large, evidently pained him, and during the fits the anterior fontanelle would protrude. The fontanelle closed at the seventh month. These hydrocephalic symptoms were followed by deafness and discharge from both ears, around each of which was an eczematous eruption at the time of the discharge, and a scurf around the lips and chin. The child began to snuffle, and there was a profuse discharge from the nostrils. At the age of three months lost power of motion in the whole of the left side of the body ; sensation in the affected parts being unimpaired. The discharge from the ears lasted until he was three years old, when, together with the deafness, it completely disappeared. The loss of power was dissipated in several months under medical treatment. From his third year to about eighteen months before admission to the hospital, there was an interval of apparent health. He then began to lose flesh, became fretful, the glands of the neck enlarged, the nasal breathing became difficult, and the eyes inflamed and clouded. Under treatment these symptoms gradually disappeared ; but he became weaker, and the loss of flesh increased. In July, 1879, had an ulcerated sore-throat, accompanied with slight fever and coldness of the extremities. Since then has lost his voice, at times completely, the aphonia lasting for a week and then subsiding spontaneously. Shortly after the ulceration in the throat appeared, his voice became gruff and hoarse, and complete aphonia supervened in the early part of the following September. During the period of sore-throat his right eye became inflamed, and has been getting gradually worse ever since. There was also dysphagia, with regurgitation of food through the nostrils ; and the act of deglutition provoked paroxysms of cough. He complained at the same time of pain in the back of the neck, which compelled him to keep his head thrown back constantly.

From the seventh to the ninth year complained of pain in the bones, chiefly affecting the left knee and shin—the latter was swollen and tender, and the knee-joint painful and enlarged. These disappeared under iodine inunction.

The dysphagia has been steadily increasing, so that at present deglutition of solids is impossible. For the last three weeks has had a severe cough, especially at night, and he is awakened by the suffocation it induces. His mother states that he is exceedingly nervous, but that his memory and intelligence are good.

Condition on application at the clinique.—Is excessively nervous ; has a dull, stupid look ; his mouth is kept constantly open, and the discharge from the throat is so profuse that he is obliged to keep his handkerchief constantly to his mouth to absorb it. Brows are corrugated. There is well-marked interstitial keratitis of the right eye, with pinkness in the ciliary zone. Both eyes are protruberant, and there is a squamous, cop-

pery eruption on the chin. The nostrils are reddened and sore. On looking into the mouth, well-marked stomatitis is discovered, the gums being nearly three times their original thickness; the swelling is most marked, however, on the hard palate, which is yellowish, anæmic, and infiltrated. The lower central incisors are notched along their cutting edges, and there is a scarlet line along the gums at the insertion of the teeth. The soft palate is covered with stellate, white cicatrices, and the remains of the uvula are seen as a jagged scar, adherent to the left posterior pillar of the fauces. There are also large scars on the posterior pharyngeal wall, and the left posterior faucial pillar is adherent to the wall of the pharynx. Rhinoscopic examination is impossible, but the nostrils are patent, and there is no discharge from the nose or nasopharynx. The tonsils are very much enlarged. It is impossible to see further than the epiglottis with the mirror. This cartilage appears as a distorted, swollen, ulcerated mass, wholly precluding the slightest glimpse of the vestibule, and covered with thick, yellow pus. Behind this irregular mass there is a constant welling-up of the most profuse muco-purulent and frothy discharge from the interior of the larynx. In the left glosso-epiglottic fossa is a deep ulcer with lardaceous base, which extends downwards and backwards towards the pharynx. The papillæ at the base of the tongue are large and tumefied.

Aphonia is absolute, and the boy can only speak in a subdued whisper. Inspiration is loud, stridulous, and is especially alarming if he makes the slightest exertion. Expiration is only difficult on exertion. The larynx does not move during the respiratory act, but when it is grasped between the fingers a rough thrill is felt, and this is also present, and to a greater extent, in the lower part of the trachea. The patient keeps his head thrown forward during the efforts at respiration, and his lower jaw is protruded and at the same time depressed.

Stethoscopic examination of the larynx and trachea reveals a loud roaring sound in inspiration; less marked in expiration. It is difficult to determine its point of maximum intensity, but it seems loudest just above the sternum, in the inter-clavicular notch. The signs in the lungs are almost completely masked by the tracheal breathing; but bubbling and hissing râles can be heard, and the lower portion of the chest is collapsed in inspiration. There is apparently no difference in physical signs in the two sides of the chest. The patient has a loud, ringing, metallic cough, with copious, purulent expectoration. His mother states that he has expectorated occasionally small darkish objects enveloped in slime. Deglutition of liquids is possible, but even finely-divided solids excite cough and are immediately expelled. There is no odynphagia. The cervical glands are enlarged, and the shins are tender on pressure. The boy is greatly emaciated.

The above signs, it seemed to me, justified the diagnosis of stricture of the upper portion of the trachea, and, probably, stenosis of the larynx, and my first impulse was to call a consultation on the advisability of immediate operative interference. But upon reflection, I deemed it better to try what the intervention of medicine would accomplish. He was, accordingly, put upon mercury and potassium iodide in large doses, and the constant inhalation of the vapour of the iodate of zinc; with instructions to be sent for if the dyspnœa should not abate within the twenty-four hours. I saw him again the following day. The breathing was much more quiet and the secretion less profuse. In other respects his

condition was the same as before. The amount of the iodide was increased, the aggregate daily dose amounting to about ʒj.

Oct. 12. Has been steadily improving: rests well at night; coughs but little, and the cough is losing its metallic character. The secretion has diminished about one-half, but is still very abundant. Since last seen, has coughed up two black, rounded bodies, enveloped in tough, adherent mucus. These were unfortunately not preserved. Their expulsion was followed by immediate improvement in deglutition, so that he now can swallow hard crusts of bread without difficulty. The mother states that since the 9th his voice has improved; but I can detect no change. The ulceration of the right half of the epiglottis has so far contracted as to permit a view of the corresponding side of the larynx. This discloses deep, active ulceration of the right ary-epiglottic fold and upper surface of the ventricular band. Nothing further can be made out. The ulcer in the glosso-epiglottic fossa is almost healed.

13*th*. Cough very slight; no dysphagia; can speak in a hoarse, gruff, brassy voice.

17*th*. Ulcer of lingual fossa healed; can speak much better.

20*th*. Voice much clearer. The laryngeal ulceration has completely healed, and a satisfactory view of its cavity can now be obtained, although laryngoscopic examination is difficult from the rigidity and adhesion of the epiglottis. This cartilage is perfectly motionless, and bound down to the wall of the right pyriform sinus by cicatricial bands. Its free border is swollen, rounded, and deeply notched, giving it a crenated appearance. There is also adhesion between it and the right ary-epiglottic fold. There is a large cicatrix on the ventricular band of the same side, which extends apparently into the ventricle. The arytenoids are swollen and almost motionless. The right vocal cord is firmly fixed in the position of lateral fixture, and is deeply congested. The left cord moves with comparative freedom towards the median line in phonation. Its free border is deeply curved, but otherwise it has a normal appearance. There is a large swelling between the arytenoids, its left half resting on the left vocal cord. This I take to be the hypertrophied meso-arytenoid fold.

The mucous membrane of the trachea is reddened, and there is a well-defined bulging of its anterior wall, about the situation of the second and third cartilaginous rings.

Although all ulceration has ceased, and cicatrization is complete, the whole right side of the laryngeal cavity, with the ary-epiglottic fold, arytenoid, and ventricular band of the opposite side, is the seat of a peculiar albuminous-looking infiltration or thickening. A somewhat definite idea may be obtained of its appearance by comparing it to the fibroid tissue which one sees in cirrhosis of the lung, or in a thickened pleura. The bluish tint of these conditions, however, is wanting, and is substituted by a deep gray pallor.

The eye is much worse, and there is pronounced kerato-iritis. The treatment consists now in tonic doses of mercury combined with cod-liver oil, and the inhalation of zinc vapour.

Nov. 17. Can speak in a very fair tone of voice, though there is still a slight twang. There is considerable motion to-day in the right vocal cord, and it approaches the middle line with considerable ease. Its anterior half is still very red. Both cords are bowed in phonation. The thickening of the inter-arytenoid fold has somewhat diminished, and the eye is beginning to improve under the instillation of atropia.

25th. Very little motion in the right vocal cord, which is again deeply reddened.

Dec. 3. Return of mobility in right vocal cord. The boy's general health has greatly improved; the voice is very fair, and presents nothing abnormal, except that it evidently requires a slight amount of effort for its production. His mother states that he is apparently perfectly well—a statement which his robust condition fully confirms. There is still some cloudiness of the cornea and pinkness in the ciliary zone.

In the early part of January, 1880, he was brought to me again for inspection. The larynx is still the seat of the fibroid hypertrophy; the cords move freely towards the median line, which they do not reach, however; and their free edges are still bowed. The boy shows no external signs of his disease, except some haziness of the cornea.

The chief interest in this case centres in the trachea and larynx. That the dyspnœa was due to stricture of the former I think there can be no doubt, both from the physical signs of tracheal stenosis and subsequent laryngoscopic examination. I was inclined to believe that there was also more diminution in the calibre of the larynx than was afterwards found. The coexistence of this fibrous form of laryngeal syphilis with other interstitial manifestations of the disease, notably the keratitis, has suggested their mutual dependence. May we not, therefore, look for this condition of the larynx at a period when these interstitial changes commonly develop?

It typifies the acute destruction which has been described as characteristic of the deep ulceration met with in congenital syphilis. Not having seen the bodies coughed up by the patient, I cannot positively affirm that they were pieces of necrotic cartilage; but in view of the immediate relief which followed their expulsion, such an assumption is not unwarrantable. I know of no other recorded instance of paralysis of the vocal cords in congenital syphilis. Their bowed condition, which persists, is probably due to inflammatory infiltration of the thyro-arytenoidei muscles, and the thickening of the interarytenoid fold prevents their perfect approximation.

Dr. Felix Semon,[1] at a recent meeting of the Pathological Society, showed the larynx of a boy, aged $5\frac{3}{4}$ years, who had suffered from dyspnœa and aphonia since shortly after birth. Post mortem, the epiglottis, ventricular bands, and ary-epiglottic folds were found to be the seat of this fibroid deposit. He also presented the larynx, taken from the younger brother of this patient, in which the epiglottis, ventricular bands, ary-epiglottic folds, arytenoid cartilages, and vocal cords were chronically thickened and hypertrophied. The upper portion of the trachea was constricted.

Lesions of the Trachea and Bronchi.—The trachea is the seat, though much less frequently, of the two forms of syphilitic inflammation described as occurring in the larynx. Apart from superficial changes,

[1] Vide Med. Times and Gazette, Feb. 21, 1880, p. 221.

well-pronounced tracheitis and deep ulceration are probably rare. The condition most commonly found is *congestion*, generally disposed in streaks of deep red, which extend into the bronchi. In Dr. Sturge's case (*vid. infra*), the redness was confined to small, circumscribed, circular areas, resembling somewhat a cutaneous rash.

In those which I have had the opportunity of examining post-mortem, the changes consisted chiefly in streaked congestion, with moderate swelling of the mucous membrane. In two of them there were numerous small ulcers confined to the upper third of the anterior wall, and chiefly limited to the mucous membrane. Small granular hyperplasiæ existed in their vicinity.

Mayr[1] found the membrane of the upper trachea erythematous and swollen. In 24 cases analyzed by Gerhardt,[2] 2 were of congenital origin. Ulcerations and cicatrices have been observed by Hüttenbrunner and Woronchin (*vid. infra*), and in Sturge's specimen there was a stellate cicatrix in the upper portion of the tube.

An interesting illustration of tracheal stenosis is recorded by Steiner[3] in a boy æt. 12 :—

> The post-mortem revealed palato-pharyngeal inflammation, with swelling of the mucous follicles and œdema of the uvula ; redness and swelling of the mucous membrane of the larynx and upper trachea, with swelling of the glands and submucosa, and enlargement of the posterior tracheal lymphatic ganglia. The lower half of the trachea was the seat of cicatricial bridles, which considerably diminished its lumen ; whilst on the right side, 2½ c.m. above the bifurcation, was found a small polypus, the size of a pea, covered with mucous membrane, and homogeneous and pale-red on section.

From an analysis of the recorded instances in which the bronchi have been found diseased, it would appear that the same pathological changes are found in them as in the larynx and trachea. These consist either in hyperæmia, thickening, superficial erosion, and granulation, or in deep, destructive ulceration, and stenosis. The bronchial tubes are filled with a bloody or muco-purulent secretion, and the neighbouring lymphatic ganglia swollen and infiltrated, and sometimes pigmented. Moliere[4] found the smaller bronchi obliterated by a granular substance. Steiner[5] observed stenosis of the right bronchus, and dilatation of the left. The commencement of the former was constricted, partly by a valve-like, projecting ledge of mucous membrane, and partly by a cord-like cicatrix, which extended into the tube from the trachea to the extent of about 2½ c. m., causing stricture of the bronchus. The adjacent bronchial glands

[1] Zeitschr. Gesellsch. d. Aerzte zu Wien. Trans. in the Annales des Mal. de la Peau et de la Syph. Tom. iv., 1852, p. 288.

[2] Ueber Syphilitische Erkrankungen der Luftröhre. Deutsches Archiv für Klin. Med. Bd. II., 1867, p. 538.

[3] Jahrbuch für Kinderheilkunde, 1865, Bd. VII. II. § 64.

[4] Observation de Syphilis Congénitale. Annal. de Dermatologie, tom. ii. 1869-70, p. 407.

[5] Loc. cit.

were swollen, caseous, and pigmented, and the pharynx, larynx, and trachea diseased.

Gerhardt[1] made the diagnosis of stricture from the physical signs of obstruction of the left bronchus, which disappeared under iodide of potassium. There was also destructive ulceration of the pharynx, uvula, and arch of the palate; the epiglottis was swollen, erect, scarcely movable; and there was an ulcer of the left aryepiglottic fold.

Woronchin[2] discovered in a boy, aged fourteen months, a large ulcer, with elevated, clean-cut edges, at the beginning of the right bronchus, and on the posterior tracheal wall.

Its left half was deeper than the right, and had caused necrosis of the cartilaginous rings. At its bottom was a caseous node. The ulceration extended along the anterior wall of the bronchus into the substance of the lung. There was also gummy ulceration of the greater wing of the sphenoid (left) bone, and partial necrosis of the lower jaw. The cervical and bronchial glands were swollen and cheesy, and the lungs were the seat of pneumonia, atelectasis, and emphysema.

Hüttenbrunner[3] found stricture of the bronchi, at their bifurcation, in a girl twelve years of age:—

The uvula and palatal arches were completely destroyed, and their site occupied by lardaceous material and cicatrices. The epiglottis, which could be felt with the finger, was wrinkled, distorted, and covered with warty excrescences, which extended from the base of the tongue, on both sides of the larynx, as far downwards as the vocal cords. From the latter, as far as the end of the trachea, were abundant, streaked, superficial cicatrices, which were more marked upon its upper anterior wall. Immediately above the bifurcation, and somewhat to the right, was a radiated scar, which had penetrated to the submucous tissue, and which extended upwards as far as the sixteenth tracheal ring, and downwards to the beginning of the right bronchus. From this cicatrix there passed another cord-like band, which jutted out into the trachea, and was inserted into the posterior wall of the left bronchus, constricting it to the size of a goosequill.

The bronchiæ, as far as the fourth division, presented cicatrices similar to those observed in the trachea, and in some places were dilated to the size of the little finger.

Laryngeal Symptoms. *Voice and Cry.*—The cry in the infant, and the voice in the older child, exhibit all grades of phonetic impairment from slight huskiness to the toneless whisper of absolute aphonia. At first the cry has a shrill, piping tone that has been compared by West and Zeissl to the sound of a child's toy trumpet. This sometimes degenerates into a peculiar squeak. Soon it assumes a characteristic vibratory twang, difficult to describe; but not unlike the vocal resonance which is heard just above the level of a pleuritic effusion. This is probably due to the sonorous vibrations of the thickened mucous membrane, which, at a stage when infiltration has not advanced to consolidation, is loose, and admits of being thrown into exaggerated vibration by the current of expired air. Later the voice becomes harsh, cracked, and finally completely

[1] Loc. cit.

[2] Jahrbuch für Kinderheilkunde. Bd. VIII., 1875, p. 108.

[3] Ibid. Bd. V., 1872, p. 338.

lost. It is surprising, however, to what an extent the larynx may be involved without impairment of the voice.

Cough is frequently present, and is a very distressing symptom. It is paroxysmal, suffocative, intermittent, raucous, and often followed by vomiting. The impairment of phonetic quality may be of diagnostic value in those cases where corresponding changes in the voice are absent. The guttural character of the cough is thought by Casati to depend nearly always on laryngeal ulceration. The paroxysms may be excited by crying, or attempted deglutition; but are generally worse at night, leading to attacks of dyspnœa, which threaten suffocation. In Hüttenbrunner's case they closely resembled the paroxysms of pertussis. There is not much *expectoration*, except in the deep ulcerative form, when it is very profuse and muco-purulent, filling the larynx, and interfering with laryngoscopic examination. The amount of secretion may be taken as an approximate measure of the extent to which the destructive process has advanced.

Respiration is seriously embarrassed; the rhythm hurried, and often interrupted. Attacks of dyspnœa are brought on by coughing and suckling, and are worse at night, leading to orthopnœa, cyanosis, and convulsions. Sometimes the breathing has a *bronchial* sound, and is stridulous and stertorous, according to the amount of obstruction. The respiratory distress is, as a rule, commensurate with the amount of laryngeal stenosis; but secondary changes in the trachea, bronchi, and lungs are sometimes important factors in its production. It is also modified by the degree of nasal obstruction from coryza.

Deglutition is difficult, and sometimes painful and impossible. It is caused by pharyngo-laryngeal swelling and ulceration; but we may assume that, in rare instances, it is due to lesions of the œsophagus itself. Whitehead[1] relates a case where *hemorrhage* from the vagina took place on the second day after birth, and, a few hours later, from the throat.

Laryngismus occurs quite frequently, and is sometimes the immediate cause of death. In a case reported by Barlow,[2] it was associated with disease of the meninges of the brain. Van Harlingen[3] has reported a case in which a peculiar intermittent laryngeal spasm was associated with bone syphilis:—

> The spasm occurred in frequent attacks of brief duration, coming on suddenly, without cough or other premonitory symptoms, lasting only for a few seconds, and passing away with a long-drawn breath, followed by cough. During the attack the breath was checked entirely, and the child made agonized efforts at inspiration. The spasms appeared to be excited by handling the infant, and particularly by laying it on its back. In less than two weeks later they were not so marked.

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[1] Op. cit.

[2] Trans. Path. Soc. of London, vol. xxviii., 1876–77, p. 287.

[3] Phila. Med. Times, Oct. 11, 1879, p. 3.

External Signs.—The superficial laryngitis usually makes its appearance in the secondary stage of the disease, whilst the deeper destructive process occurs later, in the period of tertiary lesions. This order of eruption, however, is by no means invariable, for deep ulceration is found among the earliest symptoms of infection. These inflammations, accordingly, are associated with the corresponding external phenomena of these periods. There is, however, no good reason to believe that any definite relationship exists between the laryngeal and cutaneous lesions. In the course of a laryngitis the chronological succession of the cutaneous syphilides may be traced throughout their clinical history; they appear and disappear without any appreciable influence on the laryngeal inflammation. It is an interesting fact, that while the external lesions yield readily to antisyphilitic medication, the laryngeal have a tendency to persist. The larynx seems to be the last to surrender to therapeutic influence.

Among the secondary *complications* in the lungs, are *congestion*, *atalectasis*, *emphysema*, *bronchitis*, *pleurisy*, and *pneumonia*. The latter is often the immediate cause of death. But the condition which commands most serious attention is the *sudden and fatal laryngeal œdema*, which occurs without warning, and from which the patient dies before assistance can be obtained.

Mahon[1] has seen death from pulmonary consumption, in an infant, with aphthæ in the mouth, dyspnœa, and many ulcerations in different parts of the body; and Whitehead[2] has observed laryngeal phthisis as the result of syphilitic inflammation of the larynx. In a specimen shown to me by Dr. Barlow, the left apex contained a small cavity surrounded by a peculiar kind of infiltration, and the larynx, trachea, and bronchi were filled with false membrane. The patient had suffered for some time from laryngeal symptoms, and finally died from laryngo-tracheal diphtheria.

Diagnosis.—It is only exceptionally that mistakes may arise in the recognition of the deeper forms of bucco-pharyngeal syphilis. Deep ulceration of the palate, pharynx, and nose, showing a disposition to centrality of position and invasion of the bone, leading to perforation of the palate, adhesions, and stenosis, and healing under mercury and potassium iodide, furnishes abundant proof of its specific nature. When such a condition is met with, syphilis is its cause in the overwhelming majority of cases, and the burden of the diagnostician will be to prove it of other origin. Practically the diagnosis will involve its discrimination from tuberculosis and lupus. It is unnecessary to enter into the clinical and pathological history of these diseases, from which it may be differentiated, by the diagnostic characters already described, by the *ensemble* of signs which are the accepted physical evidence of congenital syphilis, by the history and treatment of the case. Where syphilis appears primarily in

[1] Recherc. Import. sur la Malad. Syphilit., etc., Paris, 1804, p. 433.
[2] Op. cit., Case XXV.

the pharynx, and other proof of its existence is wanting, there is also very little room for doubt. Horace Green[1] taught that tuberculosis may originate primarily in the pharynx, a doctrine since supported by Trélat[2] and Frankl;[3] but it is doubtful whether it can occur without preceding or coexistent implication of other organs. That lupus of the throat may be mistaken for syphilis, was pointed out by Arnal,[4] who first described it. Primary lupus of the pharynx is very rare, and doubt will only arise when it invades that cavity from without.

The laryngeal affection in its first stage may be mistaken for simple laryngitis, and when associated with chronic bronchial irritation or pulmonary inflammation, may be confounded with phthisis laryngea. But the greatest difficulty will arise in its discrimination from *laryngeal growths*. Here, if laryngoscopic examination be impossible, the diagnosis may be involved in doubt.

That the iodide of potassium possesses an influence over the ulceration of scrofula equal to that which it exerts upon the tertiary lesions of syphilis, is a popular fallacy which obtains in some quarters even at the present day. Rapid cicatrization under this drug practically settles the question of syphilis; but the diagnosis can be made, in the majority of instances, without invoking its aid. When ulceration attacks the bone the action of the iodide may be slow. Here, if the processes of nutrition be stimulated by tonic treatment, and especially by cod-liver oil, the processes of repair will be accelerated. But this obviously does not warrant the conclusion that the destruction is not syphilitic. The power of cod-liver oil over the events of congenital syphilis is the same as that which it exercises in other wasting diseases, an influence that is often overlooked. The assumption, therefore, that an ulceration which heals under this drug either alone or combined with the iodide of potassium, is necessarily scrofulous, diverts the mind from a rational interpretation of the case.

The *prognosis* will be influenced greatly by the *age* of the patient; the earlier the throat is attacked the more serious the results. Pharyngo-laryngeal ulceration occurring within the first year is almost invariably fatal. Deep ulceration of the larynx, in view of its destructive tendency, offers a grave prognosis at any period. Pharyngeal ulceration, however, appearing late, or as a manifestation of tardy syphilis, yields gracefully to iodide of potassium. The prognosis in chronic superficial laryngitis is more favourable as regards life, though the tendency to laryngeal œdema and spasm should not be lost sight of. This form of laryngeal syphilis is exceedingly persistent and intolerant of treatment. It is often the *primum vivens* and the *ultimum moriens* of the disease. As Vidus Vidius said of syphilis: "it makes many truces, but never peace."

[1] Treatise on Diseases of the Air-Passages, N. Y. 1852, p. 118.
[2] Paper read before Acad. de Méd., 27 Nov. 1869. L'Union Médicale, 1869, p. 778.
[3] Berliner Klinis. Wochenschr., Nov. 1876.
[4] Journal Hebdom., 2me S. tom. viii. 1832, p. 99.

In all forms of laryngeal syphilis death frequently takes place from acute œdema. The prognosis will depend, furthermore, upon the gravity of the general infection and the secondary complications in the lungs.

Treatment.—In acute laryngeal syphilis the treatment should consist in mercurial inunction over the thyroid cartilage, the inhalation of calomel or iodate of zinc in the form of vapour, and the internal administration of potassium iodide. The aggregate daily dose of the latter should be large, and should be pushed rapidly to the verge of iodism. Should the inflammation not yield within twenty-four to forty-eight hours, or should it show a disposition to advance, I believe it to be the duty of the surgeon to open the trachea.

In the more chronic forms, mercury in tonic doses combined with iodide of potassium should be exhibited, the local treatment consisting in the use of stimulating pigments and inhalations. As a topical application to the pharyngeal ulceration great reliance may be placed upon iodoform, or the vapour of the iodate of zinc.

In addition to those already referred to, brief mention may be made of the following illustrative cases, for fuller particulars of which, the journals and works, from which they have been taken, should be consulted. Rosen[1] met with caries of the palate in a girl aged 11. Swediaur[2] saw a syphilitic ulcer in the throat of a child who had inherited the disease from its father. The ulcer was similar in character and position to one with which the father had previously been affected. Cliet[3] observed ulceration and softening of the mucous membranes of the gums, palate, and mouth in an infant. Ulceration of the pharynx and caries of the nasal bones, in a boy aged eighteen, is described by Balling.[4] A number of cases of laryngitis and buccal ulceration are related by Whitehead,[5] but no mention is made of the post-mortem appearances. Sperino[6] relates a case of ulceration of the palate, tonsils, and posterior laryngeal walls in a child æt. eleven. Treated as scrofulous, it destroyed the soft palate, led to caries of the vault of the hard palate, which, destroying the palatine apophyses of the superior maxillæ, established a communication with the nasal fossæ—the child's voice was hoarse and unintelligible; it suffered from cough and purulent expectoration, dyspnœa, and light fever with nocturnal exacerbations. These symptoms disappeared rapidly under iodide of potassium. Two cases of palatal ulceration and necrosis in subjects over forty, and one of naso-palatine osteitis in a lad of seventeen, are referred to by Ricord.[7]

[1] Dis. of Child., Lond., 1776, trans. by Sparrman.

[2] The Treatment in Ven. and Syph. Dis., Lond. 1819, vol. ii. p. 9.

[3] Observat. Med.-Chir. rec. à l'Hôp., de la Char. de Lyon, 1823, p. 90, 2me partie.

[4] Ueber angeborene. und erbliche Syphilis. In Hecker's Litterar. Annal. der Gesammt. Heilkunde, Berlin 1832, p. 129 et seq.

[5] Op. cit.

[6] La Syphilisation etudié comme méthode curative, etc., Paris, 1855, p. 421, Obs. 82.

[7] Discussion sur la Syphilis larvée. Bull. de l'Acad. de Méd., Oct. 1853, tome xix. p. 27.

Yvaren[1] gives the history of a female in whom syphilis made its first appearance at the age of seven. At twenty-two, ulceration of the palate occurred, with pain in the throat, which, at first fugitive, finally became fixed. A month later, fresh ulceration broke out which destroyed the velum; respiration became difficult and stridulous, and suffocation was imminent. On depressing the base of the tongue to cauterize the larynx, the epiglottis was seen to present an appearance like the comb of a cock, and to be divided from above downwards by a large ulcer.

Zeissl[2] has seen ulceration of the tonsils, velum, and hard palate, accompanied with dyspnœa, in a boy three and a half years old. Fournier[3] alludes briefly to two cases, in one of whom, æt. eighteen, was found a gummy tumour of the velum and an ulcerated tubercle of the posterior part of the pharynx; in the other, æt. twenty-five, a gumma of the velum. Neither of these patients had even had the slightest sign of venereal disorder. Melchior Robert[4] describes, as an example of "vérole d'emblée," the case of a woman æt. forty-two, who had, upon the velum, an oval patch which seemed to be the *avant coureur* of perforation. A most interesting illustration of congenital laryngeal syphilis, in a girl æt. eleven, is related by Czermak.[5]

In the middle of the hard palate were two suppurating ulcers, situated alongside of each other, which had reached the bone; the soft palate was ulcerated and the uvula completely destroyed. Cicatrices of old ulceration existed in its vicinity; the posterior wall of the pharynx presented a dirty yellow appearance, and the epiglottis was enormously swollen and injected, and presented on the right side a large mucous patch (?) covered with thick, yellow pus. The entrance of the larynx was so constricted that only the posterior portion of the cords was visible, and the air entered and departed from the organ with a loud noise. A few days later, an ulcer formed on the left of the epiglottis, "small but deep, in such a manner that the epiglottis, still swollen, presented a form altogether peculiar, of three lobes." An abundant purulent secretion issued from the left side, between the epiglottis and ary-epiglottic ligament, which rendered respiration difficult, and provoked paroxysms of cough. When the swelling of the epiglottis had subsided, the cords were seen to be the seat of "two patches of a yellowish colour with sharp angles, and some twentieths of an inch long." Laryngotomy was performed. Infra-glottic examination then revealed, between the free border of the epiglottis and right arytenoid, an opening limited laterally, in the projected image, by a morbid cushion and the right vocal cord. Through this opening the view extended higher up into the pharynx. "It was curious," observes the author, "to examine the constricted glottis, from below upwards, during phonation. When I required the patient to make a sound, which of course she could not accomplish, I immediately observed the borders of the glottis to approach one another, and to leave but a very narrow oblong crack, or rather a furrow, which, however, was not rectilinear, nor equally narrow throughout its length, because of the swelling and puffing of the vocal cords, which still existed, although somewhat diminished. Also, in closing the canula the voice was very feeble and hoarse." Some weeks later the swelling subsided, the voice became nearly natural, and the patient made a good recovery.

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[1] Des Metamorphoses de la Syphilis, etc. Paris, 1854, p. 339.

[2] Wochenblatt d. Zeitsch. d. k. k. Gesellsch. d. Aerzte zu Wien, 1856, No. 22 (Arch. f. Heilkunde, 1858, Bd. I. Zweite Hälfte. S. 29).

[3] Loc. cit. [4] Mal. Vén., Paris, 1861, p. 701. [5] Loc. cit.

Risdon Bennett[1] was consulted by a girl of sixteen, whose soft palate had been entirely destroyed, and in whom ragged, dirty, livid ulceration of the back of the pharynx and tonsils coexisted with intense laryngeal obstruction with aphonia and tenderness over the organ. The apex of the left lung presented the physical signs of commencing consolidation. The pharyngeal ulceration cicatrized, the laryngeal distress was dissipated, and the trouble in the lung resolved in nine days under the iodide of potassium. The author, however, is disposed to look upon these cases as strumous. A similar example of destruction and perforation of the palate is recorded by Williams.[2] A case in which syphilis made its first appearance by perforating the nasal septum, and finally led to destruction of the hard palate, is reported by Bouchut;[3] one of laryngeal ulceration by Chabalier;[4] and Roger[5] relates an example of perforation, caries, and purulent infiltration of the thyroid cartilage, abscess of the thyro-hyoid membrane, and purulent infiltration of the crico-thyroid muscle, in a girl nine months old. In Gerhardt's case, referred to above, there were tumefaction and paralysis of the epiglottis, with lardaceous ulceration of the ary-epiglottic fold. Herard[6] reports, as scrofulous, ulceration and necrosis of the palate and nose, which is obviously syphilitic, and in the discussion which followed his paper, Hervez de Ghégoin referred to two similar cases under his observation, which were cured by the Liquor Van Swieten.

Türck[7] met with deep ulceration of the epiglottis and ventricular band; Bouchut[8] refers to an infant, under the care of Deville, in whom embarrassed respiration coexisted with ulceration of the palatine vault, and velum; and Holmes[9] has performed tracheotomy for congenital syphilis of the larynx. Frankel[10] describes, and figures the post-mortem appearances of the larynx in an infant, dead of syphilis. There was perichondritis, with partial necrosis of the cricroid, perichondritis and loosening of the left arytenoid, induration and fatty degeneration of the posterior crico-arytenoid muscles, the arytenoideus, and the superior laryngeal nerve of the left side. A similar case is recorded by Schrötter,[11] and Rauchfuss[12] says that he has met with perichondritis laryngea in congenital syphilis.

[1] Med. Times and Gazette, Jan. 11, 1862, vol. i. p. 31.
[2] Loc. cit. p. 66.
[3] Gaz. des Hôp. No. 90, Aug. 1865.
[4] Journal de Méd. de Lyon, 1st an. tom. 1, 1864, p. 345.
[5] L'Union Médicale, 1865, Nos. 10 and 17, Obs. XVII. p. 233.[1]
[6] Bull. de la Soc. Méd. des Hôp., tom. ii. 2me série, S. 1865, p. 64.
[7] Loc. cit.
[8] Mal. des Enfants, 1867, p. 1050, Obs. III.
[9] Op cit. p. 358.
[10] Wiener Med. Wochenschrift, 1868, Nos. 69 and 70.
[11] Jahresber. für 1871–73. Wien, 1875, p. 80.
[12] Gerhardt's Handbuch, 1878. Bd. iii. Zweite Hälfte, p. 241.

[1] Roger has also recorded a case of ulceration of the palatine vault, velum and pillars of the fauces, with chronic laryngitis, in the Bull. de la Soc. Méd. des Hôp., 2me S. tom. 2, 1864, p. 33.

On the authority of this writer, there are notes of deep ulceration and perichondritis in infants from two to three months old, in the post-mortem records of the Foundling Hospitals of St. Petersburg and Moscow.

A number of cases of destructive laryngeal inflammation in infants are reported by Casati,[1] which present many features of interest. Bulkley[2] has observed ulceration of the throat and laryngeal obstruction, in a child who had also syphilitic disease of the lung; and a child is referred to in the *British and Foreign Medico-Chirurgical Review*,[3] upon whom tracheotomy was performed for syphilitic laryngitis.

Van Buren and Keyes[4] give the history of a boy aged 16 years, with chronic destructive disease of the nose, including both nostrils, and part of the upper lip, whose throat had been ulcerated in childhood, destroying the uvula, and leaving the soft palate adherent to the pharyngeal wall. The case was progressing to the usual unfavourable termination under antiscrofulous treatment, when iodide of potassium was given, and the cure was complete in a few weeks.

Handfield Jones[5] describes a large, perforating ulcer of the soft palate, in a girl aged 13 years, which yielded to the iodide. Catti[6] has operated for pharyngeal stenosis in a lad 15 years of age.

The soft palate was bound to the posterior pharyngeal wall by cicatricial adhesions; the hard palate was covered with cicatrices; and the space between the posterior wall of the pharynx and base of the tongue was filled with a red mass, in whose centre a slit existed, forming the only communication with the structures beneath. Across this opening were stretched cicatricial bands, which offered a delusive resemblance to the vocal cords. The larynx could not be seen, but two years before, the epiglottis and ary-epiglottic folds were found thickened and cicatrized, and the ventricular bands swollen.

In 1876, Dron[7] read a paper on tardy syphilis, in which he gave a number of instances in which the naso-pharynx was the seat of ulceration. In the discussion which followed, Horand observed that he had also met with ulceration in that part of the pharynx. In a girl aged 4 years, Reimer[8] found the mucous membrane of the epiglottis and entrance of the larynx reddened and swollen, and a papillomatous excrescence, resembling a broad condyloma, on the left vocal cord.

After death, the epiglottis was seen to be œdematous; there was intense redness, and a millet-seed ulcer of the right vocal cord. The edges of the ulcer were sharp and clean-cut, and its base lardaceous. On the under surface of the cords were two ulcers, the size of peas, with callous edges, which had penetrated to the cartilage. The mucous membrane of the trachea and bronchi was scarlet and loosened.

Ulceration of the throat in a boy, treated unsuccessfully for scrofula,

[1] Loc. cit.
[2] Rare Cases of Congenital Syphilis, N. Y. 1874.
[3] 1875, vol. ii. p. 29.
[4] Op cit. 1874, p. 599.
[5] Med. Times and Gazette, March 27, 1875, p. 338.
[6] Wiener Med. Presse No. 18, May 2, 1875.
[7] Loc. cit.
[8] Loc. cit. p. 105.

but rapidly healing under the iodide, is related by Wilks.[1] Pharyngeal ulceration has been seen by Israel,[2] who refers to similar cases reported by Edward Wohlaur, Orsichowsky, and Schimburg.

Gressent[3] saw ulceration and destruction of the velum and tonsils, in a girl under the care of Ricord; and ulceration of the palatine vault in a woman 41 years of age. This patient had suffered since her eleventh year, from sore throat and aphonia. The author also refers to a woman, under the care of Trousseau, in whom ulceration of the mouth and pharynx appeared at the age of twenty.

Characteristic examples of bucco-pharyngeal ulceration have been collected by Chaboux;[4] Wendt[5] has observed adhesion of the palatine arches with the posterior pharyngeal wall; and Campbell[6] reports, for Bulkley, loss of the palate and uvula in a boy of eight. An ulcerating syphilide in a child fourteen months old, associated with multiple ulceration of the palate and velum, is recorded by Dujardin-Beaumetz.[7] Levis[8] has seen the pharynx so constricted as to scarcely admit the point of the little finger. Deglutition of solid food was impossible, and liquids were swallowed with difficulty. Klink[9] describes an ulcerating syphilide of the face, which involved the mouth; Laschewitz,[10] bucco-pharyngeal ulceration in a girl aged 18 years; and Owen,[11] destructive ulceration of the right tonsil, soft palate, and back of the pharynx, in a girl of five. The following year a relapsing ulceration attacked the palate and both tonsils.

Extensive palato-pharyngeal ulceration, associated with a destructive syphilide of the face, is recorded by Atkinson.[12] It had been treated as lupus; but, being recognized as syphilitic by the author, was arrested promptly by appropriate remedies.

Bumstead[13] refers to six unpublished cases of laryngeal syphilis under the care of Lefferts. In three the destruction was limited to the epiglottis, which in two was totally destroyed, and in one, loss of half of the upper border existed. In one of the two cases of total destruction the ulceration had extended to the right aryepiglottic fold. In the three remaining there was general destruction of the laryngeal tissues with stenosis. In all there was destruction of the pharynx.

[1] Lancet, Feb. 19, 1876, vol. i. p. 283. See also Wilks and Moxon, op cit. p. 356.
[2] Langenbeck's Archiv, Bd. xx. 1876, p. 302.
[3] Des Manifestations tardives de la Syphilis Héréditaire. Thèse de Paris, No. 233, 1874, pp. 34, 37, and 45.
[4] Op cit.
[5] Ziemssen's Cyclopædia, Am. ed. 1877, vol. viii. p. 75.
[6] Archiv. of Dermatology and Syphilis, 1878, p. 240.
[7] L'Union Médicale, 1879, No. 2, p. 13.
[8] Med. and Surg. Reporter, May 3, 1879, p. 381.
[9] Vierteljahr. für Dermatologie und Syphilis, 1877, Bd. ix. p. 417.
[10] Ibid. 1878, Hefte ii.p. 269.
[11] British Medical Journal, 1879, vol. i. p. 46.
[12] Loc. cit. p. 71.
[13] Op. cit. p. 754.

A large ulcer of the palatine vault in an infant, fourteen months old, is described by Lalesque.[1] Dr. Barlow, at a recent meeting of the Pathological Society,[2] showed the larynx of a child, eleven months old, who had suffered for a long while from chronic laryngitis. The autopsy revealed œdema of the aryepiglottic folds, erosion of the mucous membrane above and below the vocal cords, and within the ventricles, and some scanty, thin, and closely-adherent laminæ of false membrane. The speaker said that Dr. Warner had met with warty growths in the larynx of a congenital syphilitic. Dr. Lees referred to a case which required tracheotomy; and Dr. Allen Sturge presented the larynx of a boy, aged two and a half years, who had suffered from dyspnœa and aphonia ever since his twelfth month.

Death took place from spasm of the laryngeal muscles, brought on by exposure to a high wind. The left aryepiglottic fold was much swollen; the vocal cords partially destroyed by ulceration; and deep cicatrices radiated upwards and downwards from them. There was a stellate cicatrix in the upper portion of the trachea, and from the ventricles protruded growths of an uncertain nature, which were continuous along the middle line in front.

At a meeting of the New York Society of German Physicians,[3] Dr. Brandeis mentioned a girl of twelve, who was deaf in both ears, had parenchymatous keratitis, and perforation of the hard palate; Dr. Adler referred to a boy of fourteen years of age, in whom the larynx had been opened for pharyngeal stenosis; and Dr. Jacobi stated that he had observed necrosis of the vomer, with subsequent brain syphilis, in the fourteenth year. In a girl, aged three and a half years, Dr. Eröss[4] found a hypertrophic condition of the epiglottis, associated with slight œdema of the aryepiglottic folds and inflammation of the vocal cords. On the left cord was a growth which resembled a gummy tumour.

A few instances are on record where it was thought that hereditary and acquired syphilis were present in the same individual. Thus, Trousseau[5] states that he has seen a chancre in the pharynx of a congenital syphilitic; Dowse[6] met with ulceration of the faucial pillars, pharynx, epiglottis, vocal cords, and arytenoids, which he believes was due to "reacquired hereditary syphilis;" and Lennox Browne[7] alludes to a young man with the characteristic signs of congenital disease, "who had been under medical care for palatal ulceration, acknowledged to the primary affection, had the scar of a chancre, and some years after his first appearance as a patient suffered from syphilitic invasion of the larynx."

[1] Annal. de Dermatologie et Syphiligraphie, 2me s. tom. i., 1880, p. 129.
[2] Vide Lancet, April 10, 1880, p. 566.
[3] New York Medical Journal, March, 1880, vol. xxxi., No. 3, p. 307.
[4] Jahrbuch. für Kinderheilkunde, N. F., Bd. xv., 1 Heft. p. 139.
[5] Vide Bumstead, edition 1864, p. 624.
[6] Trans. Clinical Soc. of London, vol. x., 1877, p. 169.
[7] The Throat and its Diseases, London, 1878, p. 212.

The following cases, under the care of Dr. Morell Mackenzie, I am enabled to publish, with his kind permission:—

Case II.—Chas. E., æt. 8, applied at the Hospital for Diseases of the Throat, July 4, 1864, suffering from hoarseness and dyspnœa of six months' standing. Laryngoscopic examination showed that the left half of the epiglottis was ulcerated away; the ulcerative process still going on; vocal cords thickened; no pharyngeal disease. Before this child was born his mother had twice aborted, and she had scars (syphilitic) in the forehead and in the pharynx. The ulceration of the epiglottis healed at the end of six weeks, but the voice remained hoarse, and the vocal cord slightly thickened.

Case III.—M., æt. 11, brother of the last patient. On admission was pale and emaciated, having suffered from difficulty in swallowing for the last eight months. The centre of the epiglottis was ulcerated away, and the right side greatly swollen. The patient was restored to comparative health at the end of six weeks, the ulcerative process having entirely ceased.

Case IV.—F., æt. 8, brought to Dr. M. suffering from sore throat. Ulceration of the edge of the epiglottis and of the central glosso-epiglottic fold. The symptoms had existed for seven months, but rapidly passed away under the iodide of potassium.

Case V.—M., æt. 13, dysphagia and dyspnœa of five weeks' duration. The epiglottis was œdematous on the left side, and slightly ulcerated. The boy's mother stated that soon after his birth he had been covered with an eruption, and had suffered from sores at the anus. She had suffered from three miscarriages before this child was born. At the end of a week the swelling had subsided, but there still remained some ulceration.

Case VI.—M., æt. 9, suffers from difficulty in swallowing. The whole of the epiglottis had been already destroyed by ulceration, and there was still a large raw surface. In less than two months the ulcer was completely cured.

In all these cases iodide of potassium internally, and sulphate of copper locally, were administered. In no case were the teeth pegged, or was there any ulceration of the palate. In addition to these Dr. Mackenzie informs me that others have come under his observation, of which he has unfortunately no record. He remembers, however, three or four cases in which the edge of the epiglottis had become adherent to the sides of the pharynx from ulceration of the opposed surfaces.

The following cases came under my care at the clinique of Dr. Mackenzie, to whom I must again acknowledge my indebtedness for the right of publication:—

Case VII.—Geo. W., æt. 15. Mother has had four premature births and three children at full term. Of these, two died shortly after birth. She is subject to a scurfy eruption on the head which causes her hair to fall out; suffers from pain in the bones at night, and has the scar of a syphilide in the neck. After the birth of this child, had an eruption on the arms and back, which formed scabs, and ultimately "dried up."

Patient healthy at birth—his mother states that his head was unusually large. In the second week of life, began to have screaming fits at night,

in which he would burrow his head in the pillow and contract his brows. These fits, which lasted for several weeks, the mother attributes to the large size of his head. When they passed away, he was left without power in the lower extremities, and the muscles of the legs were rigid and contracted. This condition, which precluded the use of his limbs, lasted until he was three years old. He became greatly emaciated, and at the age of ten months, his head broke out in a copious eruption, with which he was affected, off and on, until his second year. From the third to the sixth year, was apparently healthy. During that time had the measles; when six years old, began to complain of sick headache, and pain in the bones, especially in the knee-caps. Later on, had some inflammatory trouble with his eyes, which lasted for a long while. His throat was first affected in Feb. 1879. It became sore, and he had great dysphagia; this grew worse, and his voice became rough and hoarse. The doctor said he had "ulceration of the tonsils." The dysphagia became worse, and his food regurgitated through the nostrils.

Jan. 26, 1880, applied at the hospital, suffering from dysphagia and moderate dyspnœa. His head is very large, and the frontal eminences stand out boldly. The bones of the nose are flattened, and he has linear streaks near the angles of the mouth. The incisor teeth are defective, but not pegged. On looking into the throat, the following condition is discovered: The uvula, arches, and posterior part of the soft palate, destroyed by ulceration; the remaining portion infiltrated with lardaceous material, and greatly thickened; small cicatrices at the posterior part of the hard palate, set in a waxy-looking thickening of its mucous membrane. The normal appearance of the fauces is completely destroyed; on the left side is seen a cicatricial mass (tonsil and anterior pillar), and the posterior pillar is adherent to the lateral wall of the pharynx. On the right side, a large, projecting, pale red, irregular body, fused with the faucial pillars, evidently the hypertrophied, infiltrated tonsil. The back of the pharynx is covered with muco-pus, which gravitates from the naso-pharynx. Upon removing this with the brush, the posterior wall is seen, thickened, infiltrated, and presenting a dirty, yellowish-red appearance. Its follicles are enlarged, prominent, filled with a yellowish secretion, and surrounded by a deep zone of red. A similar condition exists on the right tonsil. On the left side of the hard palate and alveolar ridge, extending from behind the second molar tooth backward to the fauces, and inwards towards the median line of the palatine vault, a large ulcer, of over an inch in diameter, with elevated, callous edges, and a deep, grayish base, circular in outline, and covered with a yellow discharge. The granulations have a pale, unhealthy look, and are very large and protuberant. The mucous membrane surrounding the ulcer is pale, and there is no zone of inflammation. The large size of the tonsil precludes laryngoscopic examination; but the epiglottis can be seen to be swollen, reddened, and slightly œdematous. The cervical glands are hard and swollen. Voice nasal and hoarse; cough and slight muco-purulent expectoration.

Treatment.—Hydrarg. bichlor. gr. $\frac{1}{24}$, and pot. iodid. grs. v., t. i. d.; Iodoform and vapor zinci iodat.

Under these remedies, the ulceration began immediately to heal, and by the fifth of February cicatrization was complete.

All active ulceration having ceased, I excised the tonsil, and was then able to gain a satisfactory view of the interior of the larynx. The epiglottis was greatly thickened, rounded, bent upon itself, and almost mo-

tionless; the ary-epiglottic folds and arytenoid cartilages were swollen, and presented an appearance similar to that observed in the epiglottis. The same condition was discovered in the ventricular bands. The left arytenoid was especially swollen, and sluggish in action, and the corresponding ary-epiglottic fold œdematous. No signs of ulceration; no cicatrices. Very slight reddening of cords. Trachea normal. The uniformly thickened laryngeal membrane presented a dull, lustreless, pale-red appearance.

April 19. The hyperæmic condition of the larynx is somewhat diminished in intensity; but the hypertrophy of its membrane remains unaltered. The œdema of the left ary-epiglottic fold has disappeared, and the swelling of the corresponding arytenoid cartilage is reduced considerably.

Case VIII.—Jane L., æt. 12. Mother syphilitic. Healthy, but small, at birth. When three weeks old, had thrush, with "little white blisters" on the tongue, followed by eruption on the genitals and around the anus. At the same time had the snuffles, and a constant greenish, slimy discharge from the bowel. She would cry out in the night, roll her eyes, and was subject to frequent convulsions. The patches on the tongue disappeared in about four weeks; but the other phenomena persisted until her fifth month. From this period to her eighth year, the disease was apparently latent. During this period she had whooping-cough, measles, and chicken-pox. At the age of eight, her right eye became inflamed, and shortly afterwards, the left. She was under treatment at the Royal London Ophthalmic Hospital for two years and a half, before the trouble with the eyes disappeared. During this time she was completely blind for over three months, and the mother states that her eyes were covered with a white cloud. As they were getting better, she became deaf in the right ear, and this condition persists at the present time. With these symptoms, she complained of pain in the bones.

In June, 1879, a little sore appeared on the roof of the mouth just behind the central incisor teeth. This was filled with matter, was yellowish in appearance, and spread rapidly. Her mouth was filled with an offensive, yellow discharge, and she began to cough, and complain of tenderness of the chest on pressure.

Condition on application at the clinic.—Corneæ, especially the left, hazy, and covered with small opacities; irides dull, and expressionless; marked projection of the eyeballs, which the mother states was present at birth, and before the eyes were affected. The eyes are separated by an abnormal interval, and the bridge of the nose is abnormally flattened. In the right anterior naris a small ulcer, with inflamed base, surrounded by a zone of congestion, and covered with yellow secretion; there is a copious discharge from both nostrils. The lower central incisors have a grayish mottled look, and their cutting edges are sharp and serrated. There is only one upper central incisor which has the same appearance as the lower ones, the notched condition, however, being more marked. The anterior half of the hard palate is the seat of a large, irregular, ulcer with bloody borders, and lardaceous base, and bathed in fetid pus. There is necrosis of the palate, and alveolar ridge, and just behind the ulcer of the palate, a small pin-hole perforation, through which a fine probe can be passed to the distance of a quarter of an inch, where it impinges on a roughened surface. The uvula and pillars of the fauces present minute cicatrices, and the posterior wall of the pharynx is thickened and congested.

The mucous membrane of the larynx is uniformly thickened and hyper-

æmic, and there is blood-red congestion of the right vocal cord. During phonation, the cord moves sluggishly towards the median line. Trachea congested—Cervical glands enlarged.

Treatment as in Case VII.

By the 3d of October, 1879, the ulceration had completely healed, the discharge from the nose was controlled, and the patient left the hospital cured. The thickening of the laryngeal membrane, however, remained unaltered; but its congested condition had disappeared.

More examples may be quoted, but a sufficient number has been adduced to illustrate the propositions set forth in this paper.

Encountering in almost every quarter experience antagonistic to my own, the task has been one of difficulty and embarrassment. I trust, however, that the incomplete manner in which the subject has been treated may at least serve as an introduction to the more careful study of questions replete with interest; and that the positions which have been taken may be sustained by future observation and experience.

Addendum.—Since writing the above, I have been requested by Dr. Barlow to examine the throat of a syphilitic child under his care at the London Hospital. The appearances were typical, and are worthy of mention.

Case IX.—On the upper surface of the tongue, near its base, was a large oval ulcer, with elevated, indurated, sharp, and overhanging edges, and a deep, reddish-yellow base, covered with a foul, purulent discharge. The tongue in its vicinity was inflamed. This had resulted from the breaking down of a large gumma.

The uvula and greater part of the soft palate were destroyed by ulceration, which had extended over the left tonsil, and the corresponding posterior faucial pillar. The ulceration in the latter situation had cicatrized, leaving it partially adherent to the lateral wall of the pharynx. The posterior pharyngeal wall was inflamed, thickened, and tumefied.

The mucous membrane of the entire larynx was uniformly hypertrophied, and presented a dirty yellowish-red appearance. On the rima of the epiglottis were several small spots of apparently incipient ulceration. The vocal cords were swollen, sluggish in action, and the seat of a deep mottled-red congestion.

The mucous membrane of the trachea was intensely hyperæmic.

The child is rapidly recovering under the iodide of potassium.

London, May 1, 1880.