

circumstance, for which he has proposed a different explanation(a). As yet it appears to have been noticed only in pneumonia and cancer of the lung.

ART. XIII.—*On the Chronic Diseases of the Laryngeal Mucous Membrane.* By EBEN WATSON, A. M., M. D., Fellow of the Faculty of Physicians and Surgeons of Glasgow, Professor of the Institutes of Medicine in Anderson's University, &c. &c.

It is usual to arrange the chronic diseases of the laryngeal mucous membrane according to their remote or proximate causes: but the constant plurality of such causes in the same case, and the difficulty of ascertaining with sufficient exactness to which the disease owes its origin,—a difficulty almost insurmountable in regard of remote causes,—render these and most other etiological classifications useless in practice. The cases which have occurred in my practice might, I think, be more conveniently arranged in two groups, according as the chief complaint of the patient was laryngeal cough or alteration of the voice. Doubtless, both these symptoms do sometimes occur in the same case, and at the same time; but even then it is by no means difficult to discover which is the more severe or important of the two. The patient himself, on applying for advice, at once directs attention to one or the other, as that which he would have removed, and which, being present, constitutes his disease.

I do not mean, in the following essay, to write a systematic account of the varieties of chronic laryngitis; but the fact which I have just mentioned presents itself so constantly to me in my daily experience, and appears to me so well suited to become the basis of a practical classification of these diseases, that I can-

(a) Graves' Clinical Medicine, by Neligan, vol. ii. p. 39.

not forbear illustrating it by the brief relation of two cases from among those at present under my care.

CASE I.—A clergyman, long in the habit of over-exerting his voice in public, began to complain some months ago of hoarseness, and difficulty in making himself heard. These symptoms gradually increased in severity, but still he persevered in the exercise of his usual duties, until one morning, when he spat up “a trifling quantity of blood.” His medical attendant relieved his mind at once of all apprehension regarding his lungs, but very judiciously forbade his appearing for some time in the pulpit. There was no return of the hemoptysis, but the voice remained weak and husky in spite of various means that were used for its improvement.

Soon afterwards this gentleman became my patient, and his only complaint to me was huskiness and weakness of voice, with speedy hoarseness when he spoke or read aloud for even a short time. On inspecting his throat, the soft palate was seen to be swollen, and a good deal relaxed. The mucous membrane was red and inflamed; and that part of it covering the epiglottis felt swollen, and velvety to the finger.

The history of this case would be incomplete did I not state that early in the ministerial career of my patient, he was called on to preach in a very large church, and that, in attempting to fill it with his voice, he, perhaps unconsciously, assumed a pitch beyond its natural range. A continuance of exertion in this false tone was, I doubt not, a strong predisposing cause of the affection under which he now labours.

CASE II.—The other case referred to is that of a young lady, who, towards the end of last winter, became affected with spotted sore throat, which received due treatment, and was supposed to be cured. From that time, however, she complained of frequent and pretty severe cough, which was soon accompanied by expectoration. She underwent a variety of treatment, and visited different spas and watering places without

much effect on the symptom just mentioned; but, fortunately, her general health always remained good.

Her chest was frequently examined by different auscultators, but nothing materially wrong could be detected in the lungs. At last it was supposed that the disease must be in the windpipe, and under this impression she lately placed herself under my care.

I can detect no abnormality in the chest, except a slight harshness of the respiratory murmur in the large tubes on each side of the upper part of the sternum. The breath sounds in the larynx are unnaturally loud and rough; and are generally accompanied by a moist râle.

On examining by the mouth, the pharynx is seen to be wide and cavernous. Its mucous membrane is very red in some places, to which large apparent vessels converge, and in other places it seems thin and transparent, loosely stretched over the muscles. To the finger the parts communicate a corresponding sensation of unnatural attenuation, and the epiglottis is felt stiff and narrow at the root of the tongue. The doughy feeling, in a degree natural to these parts, and so remarkable in the preceding case, is altogether absent from this one.

I have already said that this patient's general health is quite good, her appetite is excellent, and her digestion regular. She sleeps well at night; her pulse is slow and regular, and in fact she has no complaint whatever, except the cough and the expectoration of nearly pure mucus, both of which trouble her chiefly on rising in the morning.

Considering all these circumstances then, I did not hesitate to confirm the diagnosis which had been hazarded; supported as that diagnosis was both by positive signs of actual disease in the laryngeal mucous membrane, and by the absence of those of any other disease which could occasion the symptoms complained of by the patient.

I might adduce many similar cases from my note-book, but

the two just given, and which I have selected from among those at present passing under my observation, will, perhaps, demonstrate the reality and importance of the circumstance alluded to, even more forcibly than could be accomplished by multiplying examples to the same effect.

In reflecting on the cases narrated, one is led to inquire how it happened that, both these patients being the subjects of chronic laryngitis, the one was seized with cough and expectoration, while the other lost his voice. The previous circumstances of the two patients furnish us with the only answer we can at present give. The clergyman had long over-exerted his voice, the lady had not. Hence, in the former, when the chronic inflammation attacked the mucous membrane of the larynx, it speedily concentrated its energy upon the glottis, which was the most vascular and irritable portion of the organ affected. The circulation through it became thenceforward impeded, and a gradual œdema commenced. Whereas, in the other patient, the force of the inflammation was expended on the secretory apparatus of the pharyngo-laryngeal membrane, its functions became impaired, and a vitiated mucus was in a short time copiously poured upon the irritated glottis. Cough in fits, and accompanied by expectoration, was the infallible consequence.

This case, then, will at once be recognised as similar in many respects to those described by Dr. Horace Green, of New York; but it differs from them, in that the voice was never affected and the follicles were never abnormally visible in the pharynx; for the spots, seen at the commencement of the disease, were too superficial and transient to have been suppurating follicles. Indeed I am pretty sure that the dreadful affection, so vividly described by Dr. Green as common in America, is, fortunately, of rare occurrence in this country. Out of a considerable number of laryngeal cases presented to my observation, I have only met with two which might be accounted as instances of Dr. Green's follicular disease.

CASE III.—One patient was a schoolmaster from the Highlands, who had been a victim of the malady for many years. When I saw him he spoke in a husky whisper, which could only be continued more than a few minutes at the expense of much pain, referred to the region of the glottis. This pain was always caused by speaking, but ceased to trouble him when silent. His cough was harassing, and the expectoration profuse, frothy, and sometimes mixed with blood, at other times with little white cheesy substances.

His chest was free from disease; but the laryngeal respiratory sounds were louder and shorter than usual. The fauces and pharynx were studded over with white spots, the suppurated follicles, surrounded by red and swollen mucous membrane. His general health was bad; his tongue furred; his pulse quick and excitable; and his face flushed. He had also nightly perspiration and great general debility. I have not learned the issue of this case, but I should fear the worst, from the extent and duration of the disease, as well as from the circumstances of the patient.

CASE IV.—My other patient was the manager of a granary in Glasgow. He asked my advice on account of the following symptoms, viz.:—deep hoarseness and weakness of voice; pain when he attempted to raise it in calling to his workmen; a feeling of dryness in his throat, and difficulty in swallowing; a short tickling cough; and the expectoration of little white substances.

On looking into his mouth, the mucous membrane, as far as could be seen, was found in nearly the same state as that described in the former case. There was considerable relaxation of the soft palate, and a good many inflamed and suppurating follicles could be seen. No pectoral disease could be detected, and the general health was quite good. The patient thought that his complaint originated in cold, after an attack of measles which occurred ten years before I saw him, and since which time he has always complained more or less of the symptoms formerly mentioned.

I may remark here, in passing, that a blister over the throat, and the application of a solution of nitrate of silver (one scruple to the ounce of water) to the pharynx and upper part of the larynx, every second day, for about a month, were successful in removing all disease from these parts.

I believe these are fair samples of what Dr. Green would call follicular disease of the pharyngo-laryngeal membrane. There can be no doubt of the follicular affection in the pharynx, but I think it doubtful that the follicles of the larynx were similarly affected. It is worthy of remark that in all the larynges and tracheæ which M. Louis examined, and found ulcerated, he does not mention his having seen enlarged follicles in any one case. Now if these ulcers had originated in the follicles, it seems next to impossible that some of them should not have been detected, in a state of inflammation and partial ulceration, surrounding others farther advanced in that process. Nor can I regard this as an oversight on his part; for I do not recollect any case in which enlarged or inflamed follicles were detected in the larynx by MM. Trousseau and Belloc, by Mr. Porter or Mr. Ryland. Certainly there is no mention made by Dr. Copland, in his Dictionary, of altered follicles as one of the morbid lesions of chronic laryngitis found after death; and even Dr. Green himself has not favoured us with the details of any one inspection demonstrative of the proximate cause of the disease on which he writes.

In the cases, which I have related above, it does not seem to me by any means necessary, in order to account for their symptoms, to suppose that the laryngeal follicles were in the same state with those in the pharynx. An extension of the chronic inflammation to the laryngeal lining membrane is in itself sufficient to explain the phenomena referred to; and I am free to admit the probability of this inflammation having been first excited in the pharynx by follicular disease, and that it spread thence into the larynx. Even in some of Dr. Green's own cases I have thought that the evidence on which

he concluded the laryngeal follicles to be gravely affected seems unsatisfactory.

Thus, in the case of the Rev. Mr. S. (given at pp. 58-61 of his work on Bronchitis, &c.) he writes as follows:—"Pressure on the thyroid increased the pain and soreness which were constantly felt in the larynx. This last symptom, together with the permanent hoarseness and the partial extinction of the voice, was plainly indicative of the mucous follicles of the ventricles, and of those around the chordæ vocales, being involved in the disease." Now I must say, with due deference to Dr. Green, that although pressure on the thyroid might assist in a diagnosis of the condition of the pharynx, it could yield no indication of the state of the lining membrane of the larynx. And who does not know that permanent hoarseness and partial extinction of the voice often exist without any affection of either pharyngeal or laryngeal follicles? Constant pain in the larynx, moreover, is often complained of when chronic inflammation of part of its lining membrane is the only cause, and, when the pain is severe as well as constant, it is certainly not less characteristic of ulceration in any of its various forms than it can possibly be of follicular disease. I do not mean positively to deny the existence of this disease in the larynx, but to point out the absence of all pathological proof of its reality; and that the assumption of it, as the cause of certain symptoms, is neither necessary nor philosophical.

The diagnosis of the actual state of the larynx in chronic cases is, indeed, often a matter of the utmost difficulty. Little, as we have seen, can be argued from inspection of the fauces; since, when they are morbidly altered, it cannot be concluded that the larynx is similarly changed, and in a large class of cases there is no visible disease in the pharynx, while the symptoms decidedly indicate a laryngeal affection. The great desideratum, then, to which these facts point, is some mechanical contrivance, by means of which we could see at least the epiglottis and the entrance to the larynx; but, hitherto, all at-

tempts at a laryngeal speculum have failed, and we are at present unable to see any part of the larynx, except, in certain cases, the tip of the epiglottis. I cannot, therefore, omit entering my humble protest against the vague or erroneous expressions of some writers on this very subject. Thus Dr. Horace Green speaks (at p. 60 of his work, already quoted) of "pressing down the tongue," and seeing "the epiglottis standing from its base, erect and cedematous, its edges slightly ulcerated, whilst a vitiated mucous secretion was being constantly poured out from the diseased glands." And one of his friends, Dr. Alfred C. Post, one of the surgeons to the New York Hospital, writes as follows to Dr. Green(*a*):—"In a number of instances I have exposed distinctly to view the laryngeal surface of the epiglottis, and, passing over it the sponge saturated with the caustic solution, I have had ocular demonstration of its application to the mucous membrane of the larynx." On reading these passages, I was inclined to think that the parts in question must be differently formed in the inhabitants of the New World from what they are in those of the Old; for my experience, as well as that of all with whom I have conversed on the subject, is, that in but a few instances can even the tip of the epiglottis be exposed to view.

I am at present attending a patient whose epiglottis can hardly be reached with the finger, and this state of the parts I have not unfrequently met with in cases in which no ulceration had ever taken place. What, then, am I to say of the following passage, which occurs in a review of Dr. Horace Green's work on croup, which appeared in the *Lancet* of January 26, 1850?

"This gentleman, Dr. Hancock Douglas of New York, a near relative of Dr. Green's, had also in his case a tongue spatula, without the aid of which it would be difficult to *freely expose the* GLOTTIS to the view. On placing the spatula on the

(*a*) See Appendix, p. 260.

tongue, that organ is readily brought forward, and the *fissure* can at once be seen, and the instrument readily introduced."

I think the *Lancet* ought to have given a figure of this wonderful instrument, or at least an accurate description of it; and I some time since wrote to the editor to that effect, but neither figure nor description has yet appeared. If, however, this spatula be the same with that recommended by Dr. Green, a description of which may be found in that gentleman's work, I am sure it cannot fulfil any such expectations as those held out by the reviewer in the *Lancet*. In truth, the structure and relations, as well as the functions of the parts themselves, render nugatory all attempts to obtain a satisfactory view of them in the living subject. This was fully stated by MM. Trousseau and Belloc many years ago, in their admirable work already referred to; and their observations have been found but too true by myself in some experiments I have lately made with different mechanical contrivances.

The physical signs, then, of the chronic affections of the larynx, do not in general include those which may be seen. More dependence, I think, may be placed on the information obtained by touching the parts with the finger introduced through the mouth. In this way the various changes of the epiglottis may be discovered, and either the doughy feeling of œdema, or the more resisting impression conveyed to the finger in thickening of the mucous membrane itself, may be diagnosed as far down as the thyro-epiglottidean folds, or perhaps in some instances even to the glottis. Ulcers may sometimes be thus detected also, but, excepting syphilitic ulcers, they are seldom so deep or so marked at the edges as to be perceptible in an examination necessarily so hurried as the one of which we are now speaking.

Auscultation and percussion of the larynx and trachea, though often too much neglected, are, I am persuaded, capable of yielding valuable information regarding the state of the lining membrane of these organs. The stethoscopic signs are

especially worthy of attention. They consist chiefly in varieties of the respiratory murmur, and of the comparative lengths of the inspiratory and expiratory sounds. Râles are often heard in the larynx, but permanent ones are very rare. It is likewise of great importance to ascertain the state of the respiratory murmur in the upper parts of the lungs, because its strength or feebleness bears a direct ratio to the obstruction in the larynx. The tones of the voice and the sound of the cough through the stethoscope placed over the thyroid cartilage, should likewise be noted, as indicating the thickness and entireness of the valves of the glottis. I grieve to think that, so many years after the masterly remarks of Dr. Stokes on this very subject^(a), we cannot speak more precisely of the physical signs of chronic laryngitis. The observations of no one person, however extended, can suffice to establish such points of diagnosis, and I have been induced to mention some of them, in the hope that physicians will not only investigate this subject more systematically, but also, that they will publish the results of such investigations more frequently than they have hitherto done.

In the treatment of chronic disease of the laryngeal mucous membrane, I place my chief reliance on topical applications to the parts affected, but I do not undervalue or neglect more general measures. Indeed, I should despair of curing the local affection if the health of the patient were unattended to, if exertions of the voice were persisted in, and if the larynx were not freed from every cause of excitement or irritation.

I do not intend, in this place, to enter at large on the history of topical applications to the larynx. For this I must refer to more systematic treatises. Suffice it here to say, that that plan of treatment is no such novelty as many suppose, and that probably it took its origin from our own distinguished countryman, Sir Charles Bell. In his *Surgical Observations* he

(a) Stokes on the Chest, p. 247.

relates a case in which he employed a solution of nitrate of silver applied to the interior of the larynx with great benefit. His account of the proceeding is as follows:—"I made a small pad of lint," he says, "and attached it to the ring of a catheter wire, and bent the wire so as to pass over the root of the tongue and epiglottis; I dipped the lint in a solution of twenty grains of the caustic to half an ounce of water, and touched the glottis with it in this manner: with the fingers of my left hand I pressed down the tongue and stretched the forefinger over the epiglottis; then, directing the wire along the finger, I removed the point of the finger from the glottis, and introduced the pad of lint into the opening, and pressed it with my finger." MM. Trousseau and Belloc, without knowing, or at all events without acknowledging Sir Charles Bell's practice, used the very same method, but substituted a whalebone rod for the catheter wire, and a piece of sponge for the pad of lint. I confess it remains doubtful, whether Sir Charles Bell passed his instrument through the glottis into the larynx. Trousseau and Belloc tell us, they did not with their sponge and whalebone, but had recourse to an ingenious syringe for that purpose. It is, therefore, due to Dr. Horace Green, to acknowledge that he first declared he could pass a similar instrument to that of Trousseau and Belloc down into the laryngeal cavity. I must say, however, on the other hand, that after trial of various spatulas for holding down the tongue, as recommended by Dr. Green, I have gone back to Sir Charles Bell's plan of introducing the finger upon the laryngeal surface of the epiglottis, and thus guiding the sponge into the rima glottidis. The strength of the solution should vary with the requirements of the case, and it should be applied every day or second day, according to the patient's feelings. After each application a degree of rawness sometimes amounting to positive pain will supervene, and while this lasts no new application should be made; but as soon after its subsidence as convenient it may be repeated with benefit. In fact, the sooner it can be done the

better, for, powerful as we believe the remedy to be, it is often a long time ere any perceptible improvement takes place, especially when the case is one of long standing. It is of great importance that both surgeon and patient be prepared for this before commencing the treatment, else disappointment will infallibly ensue. All attempts on the part of the patient to test the progress of the cure should be for a time discouraged by the surgeon, and he should carefully avoid appearing to expect improvement by asking after the symptoms until he has good reason to believe that they are yielding. Indeed I have seldom found it necessary to ask at all after improvement in such cases, for the patient himself is always fully aware of it when it has occurred, and equally eager to speak of it.

The following case illustrates many of these remarks, more especially the hopefulness of a cure being effected, even when the disease is of long standing; and also the steady perseverance in the use of the means required for the accomplishment of a successful issue during a period in which their efficacy was anything but apparent:

CASE V.—A clergyman from the north of Scotland committed himself to my care in January last. Fully six years before he had been attacked by what he considered a common hoarseness, which he disregarded for a time; but, as it grew worse, he at length sought for medical advice. His case seemed a difficult one, and baffled the treatment of the surgeon who ordinarily attended him. He therefore removed from the country, where his parish was situated, into Glasgow, and put himself under my father's care. He was then treated by frequent leeching and blistering; he was put on a mild and continued course of mercury, followed by one of iodine, and latterly he had caustic issues made at each side of the thyroid cartilage. With these kept open, he resided for several winters in the south of England, and never during his whole treatment did he at all exert his voice, but spoke when necessary in an under tone. At length he returned home, having derived little or

no benefit from the means he had employed, and determined to give up all idea of being able to discharge the duties of a clergyman.

His complaint, however, did not become stationary, for he soon found that not only was he unable to speak aloud, but he could not sit for any length of time in a heated or crowded room. He was therefore debarred from attending public worship, and even when in the same room with a few friends, in private, he latterly felt so oppressed that he was obliged to go out into the fresh air now and again to breathe freely.

He was in this state when he visited me on the 6th of January, 1850. He spoke with apparent difficulty, in a low, husky whisper, which in a few minutes became broken and disagreeable. His health was perfectly good, and he had no cough. On examining his throat nothing particular was seen. The mucous membrane was of its usual colour, the palate was not relaxed, and no papules or follicular ulcers were to be discovered.

He complained of a burning pain, and frequently of an intense feeling of dryness in the larynx. The pain was not increased by pressure of the thyroid cartilage from without, but, during the process of applying the solution of caustic afterwards, he often mentioned that it smarted at that spot. Percussion of the larynx and trachea was loud and sonorous; the breath sounds were dry and hissing, and both the expiratory and inspiratory were of equal duration; the voice, heard through the stethoscope applied over the thyroid, had a stifled and sometimes almost a croupy tone, and the cough had a similar character.

I lost no time in commencing the topical treatment in this case, at first with a solution of one scruple of the nitrate of silver in an ounce of water. I permitted him to take exercise daily in the open air, but advised the use of the respirator, as the weather was cold and changeable. I also recommended a blister over the larynx, to assist in diminishing its irritability

and allow me sooner to pass my sponge through the glottis. This was accomplished in two or three days after commencing the treatment, viz., about the 7th or 8th of January, and continued every day, with few exceptions, till the end of the month. He then found himself so much improved as to be able to attend even a crowded church without feeling oppression of breathing as formerly, and without losing his voice, which was greatly improved, though still husky and irregular, *i. e.* incapable of modulation. I continued to touch the interior of the larynx, the glottis, and epiglottis, during the whole of February, every second or third day; and I increased the strength of the solution to two scruples of the nitrate of silver to an ounce of water. By the end of this, the second month of treatment, his sensations were so different, and his voice so much improved, that he considered himself cured. He had for some weeks attended public worship regularly twice every Sunday; a habit which he had been obliged to discontinue during the four previous years of his life. He could now speak or read aloud in an ordinary room without difficulty or failure of voice. His tone was firm and clear, and he modulated his voice as much as he had ever done.

I cautioned him against any excessive use of his voice, but encouraged him to exercise it moderately every day. I recommended him still to use the respirator, and to have his throat touched by some surgeon at least once a week, till his voice was fully restored. Since his return home I understand, through his relations, some of whom reside in Glasgow, that his voice remains strong, and that he is free from his other laryngeal symptoms; in fact, as he begins to use his voice more freely, he finds it better and stronger than he expected.

This case is interesting in many points of view. It shows how long this disease may exist in some persons without the cartilages becoming affected, and almost inclines to the belief that it is an essentially different class of affections which terminates in that manner. It at the same time proves that the

irritability of the mucous membrane is not easily worn out by time, even in the most favourable circumstances; nay, that it at length becomes so aggravated as to resemble asthma in its paroxysms of spasmodic breathlessness. In some cases I have no doubt that this irritability of the larynx, especially if complicated with ulceration of its lining membrane, becomes an exciting cause of true bronchial asthma. I can, at present, offer only one satisfactory illustration of this statement, but I believe that, if inquiry were more frequently made, cases of the kind would be numerous. If the fact were established, it would lead to an important modification both of our prognosis in cases of chronic laryngitis, and of our treatment in cases of asthma.

CASE VI.—In the autumn of 1848 a lady, somewhat below middle age, who had for some years been subject to similar attacks, was suddenly seized with a very severe fit of bronchial asthma, the violence of which was subdued in the ordinary way. When she had recovered I observed that her voice was more than usually weak and husky; but was informed that such had been its character for many years. She herself complained to me of a constant pain, of a sharp, lancinating nature, within the thyroid cartilage.

On inquiring into the history of her illness it was found that the patient in early life had been frequently attacked with acute laryngitis, which had ultimately assumed the chronic form, as indicated by the following symptoms, which remained, viz., frequent tickling cough, a weak, husky, and often hoarse voice, and ere long a constant fixed pain in the region of the glottis, combined with an incessant hawking-up of a little muco-purulent matter, sometimes tinged with blood. On carefully examining this lady's chest after the fit had passed away, the loud, sonorous râles, and occasional amphoric breathing, characteristic of partial dilatations of the air tubes, were at once detected; the resonance on percussion was deep and full; the breath sounds in the larynx were harsh and dry.

After a few days occupied in recruiting my patient's strength,

I commenced to touch the glottis with solution of caustic, and was rewarded in due time by the removal of the laryngeal symptoms, and procuring a much longer respite from the asthma than had occurred for many years.

The state of the bronchi, however, remained nearly the same, and after using various remedies with but partial benefit, I united with my father in recommending a change of climate. Our patient, nevertheless, remained in the neighbourhood of Glasgow for about a year without any regular return of the asthmatic paroxysms, though she never wanted a cough and muco-purulent expectoration. Since that time she has resided constantly in the Isle of Wight, where she has again suffered from her old complaint; and it serves to indicate the relief she experienced while in Glasgow from the touching of the larynx with caustic solution, that, upon the occasion referred to, she insisted on a similar treatment being employed.

In cases of purely laryngeal affection the fits of breathlessness and sense of suffocation are very seldom, if ever, so excessive as in the foregoing case; but they are, generally, marked enough to occasion much distress to the patient. They are most severe in those cases in which the glottis is principally affected, whether that be by œdema or ulceration. In the latter case the ulcer may not be upon the glottis itself: but, if in the neighbourhood of that organ, changes of temperature are apt to irritate the sore and excite contraction of the glottis, whereas in the former case the slightest disturbance of the general circulation, as, for instance, sitting in a heated apartment, or entering one from the cold air, immediately increases the previously existing enlargement of the glottis, so as to aggravate the patient's difficulty of breathing. Both these conditions co-exist very often in the same case, and I believe that that of the clergyman, formerly narrated (page 339), was an example of this distressing combination. Nor could I adduce a better instance in proof of the efficacy of the solution of caustic, applied to the

part affected, in removing these prolific causes of pain and anxiety.

One of the most important general instructions that can be given to a patient suffering from chronic laryngitis, is to preserve as perfect a silence as he possibly can; and even when he requires to speak, to do so in a whisper. He will thus avoid the irritation which the use of the vocal organs always produces in some degree, for in whispering the glottis is very little disturbed, and the vibration of the whole larynx, which occurs in common speaking, is diminished to the minimum. The parts are, therefore, in the most favourable state for being cured, and the progress of the case is generally satisfactory or otherwise, just as the patient submits or does not submit to this injunction.

CASE VII.—A young lady of delicate constitution, who was engaged most part of the day in teaching music, was suddenly seized, in August, 1849, with very distressing difficulty of breathing, and frequent harsh cough. Whenever she opened her mouth to speak, this cough, which was of a peculiar hoarse, barking character, interrupted her, and, in fact, prevented her from discharging her usual duties. It was this which led her to seek medical advice, for the symptom mentioned had existed, though in a milder degree, for many years. Her voice, when it could be heard, was weak and husky. The act of swallowing was painful, and she had a constant feeling of rawness in the throat and larynx.

On inspection of the fauces, the mucous membrane was found red, and the tonsils slightly swollen. Percussion of the chest was natural, and the respiratory murmur was distinct, though feeble. When the stethoscope was placed over the thyroid, the breath sounds were harsh and whistling; the epiglottis was felt to be curved laterally, and the neighbouring parts were soft and swollen. I ordered an emetic immediately, and when it had ceased to act, a blister to be applied over

the throat. Next day my patient was much improved. The difficulty of breathing and swallowing was gone, but the cough and weakness of voice remained the same. I now commenced to touch the interior of the larynx with a solution of nitrate of silver (one scruple to the ounce); her digestive organs were put in order, and a solution of quina in dilute sulphuric acid was administered. She was likewise encouraged to take outdoor exercise as regularly as the weather and her duties would permit, but on no occasion to leave the house without wearing a respirator. Under this treatment, in about fourteen days the cough had diminished in harshness as well as in frequency, the voice had become considerably stronger, and the general health much improved; but she had not recommenced teaching more than a few weeks ere all her former symptoms had returned with increased severity. The topical plan of treatment was again successful up to a certain point; the difficulty of breathing was removed, and the voice became stronger, but the cough still remained, though milder in form, and less frequent in occurrence. During the summer holidays, when relieved from the necessity of daily teaching, still further progress has been made towards a cure, and though all treatment has been suspended for months, my patient remains nearly, but I cannot say perfectly free from her former cough.

I introduce this case here for three reasons:—1st, to show, by its unsatisfactory result, the evil of continuing the exercise of the voice when the larynx is affected by chronic disease; 2nd, to illustrate the occurrence of acute action in a chronic case, a circumstance well known in regard of other diseases, but generally overlooked in estimating the danger to the life of a patient, arising from the presence of chronic laryngitis; and 3rd, to enforce caution in prognosticating as to the progress of such affections. Until our means of diagnosis are more exact, our prognosis must be given with much uncertainty, and our expectations must, consequently, be often disappointed. It must not, however, be supposed that I attribute the duration

of the preceding case to the severity of the disease. Much of it, as I have previously remarked, was due to the continuance of speaking, rendered necessary by the patient's circumstances; and when I became aware of this fact, I at once warned her of its probable effect upon the treatment.

The following case forms an agreeable contrast to the preceding, and illustrates the happy results of nearly complete silence while treatment is being employed for chronic laryngeal disease. In this case the glottis was the chief part affected.

CASE VIII.—The subject of it was a young lady, assiduously engaged in preparing herself to become a public singer. She had, I understand, a very fine and powerful voice; but, last January, without any apparent cause, it became stiff and unmanageable. She complained to her master of the difficulty she now felt in the execution of her vocal pieces, but he, unfortunately, encouraged her to persevere in her efforts to overcome it. Such attempts seemed at first to promise success, but they always left her exhausted and hoarse, even in speaking. In this manner she continued for about two months, the disease every day becoming more confirmed, and its symptoms, of course, more aggravated. It was then evident that it would be folly to pursue her present course any longer. She therefore gave up attempting to sing, and retired to the country, where all the usual remedies for laryngitis were tried in vain; and towards the end of March she came back to town, and placed herself under my care.

She complained to me of hoarseness and weakness of voice in speaking, and of inflexibility as well as want of tone in singing. She had a slight degree of pain in the larynx, amounting to a heat or dryness there; but she had neither cough nor any other symptom. Auscultation of the larynx indicated some degree of obstruction at the glottis. The chest was perfectly sound, and the general health was quite good. The appearance of the pharynx was in no way changed.

I immediately commenced the application of caustic solu-

tion to the glottis, and continued it thrice a week. I also recommended my patient to preserve as complete a silence as possible, and, if she did speak, to do so in a whisper. I had every reason to believe that she submitted strictly to this injunction, and she was rewarded by the result, for her voice was restored to its former purity about the 8th of April, when she returned to the country. Having, however, foolishly exposed herself to cold and wet soon afterwards, she suffered a relapse of her former symptoms. She therefore again came to town and submitted to a similar treatment and regimen; and it was not till the end of May that her voice had once more resumed its natural tone and power.

The insidious nature of the commencement of these chronic affections of the glottis is one of their most remarkable features. When the patient is not much in the habit of using his voice, except in common conversation, they have generally made much progress before they are noticed, and sometimes they show themselves very suddenly and in a most formidable shape. It is very likely that the occurrence of an acute aggravation of the malady is the true explanation of most of these cases. There are several of the kind on record, but as they are by no means common, I may mention the following.

CASE IX.—One evening last winter, a railway porter had occasion, in the exercise of his duties, to call aloud to one of his fellows, when suddenly his voice failed, so that he could not raise it above a husky whisper. He applied to me about six weeks after this occurrence, and he still spoke in the same under-tone. He breathed quickly and with apparent difficulty, each inspiration being accompanied by a harsh and almost stridulous sound. He had, however, no positive pain, but only a feeling of tightness in the larynx. On cross-questioning him, he admitted to me that his voice had been weak and slightly hoarse for some time prior to its sudden and complete failure.

The fauces and back of the pharynx were red and relaxed.

The thyro-epiglottidean folds, and other parts of the mucous membrane on a level with them, felt soft and swollen to the finger. The inspiratory sound, as heard through the stethoscope placed over the thyroid, was harsh and rough; the expiratory was long and whistling.

I ordered this man an emetic, and eight leeches to be applied over the thyroid cartilage, and next day I commenced touching the pharyngo-laryngeal membrane with a solution of a scruple of nitrate of silver in an ounce of water.

In ten days he was able to resume his work, but I cautioned him not to exert his voice above what was absolutely necessary. He nevertheless returned to me in about a month, almost as bad as ever with the same disease. He said his occupation had rendered it impossible for him to use the precautions I had enjoined. A blister to the throat, and the topical application repeated steadily for other eight or ten days, again restored the voice, and I have heard no more of my patient.

There is a class of cases in which the inflammatory irritation seems to be confined to the epiglottis alone. In them the voice is not at all affected, and there is no very remarkable cough. An incessant hawking, and a constant liability to choke in swallowing, are the most marked symptoms, and they, although at first apparently of little moment, sometimes increase to such an extent as to constitute a very troublesome and painful disease.

CASE X.—Some time ago, a middle-aged lady consulted me for what she thought a tightness in the throat. She described this as being so bad in the morning that she had not been able to breakfast with any degree of comfort for about a year; so constant was the failure of the epiglottis to protect the opening of the larynx, and so irritable were the valves of the glottis itself. Fluids, as she said, went constantly "into the wrong throat," and both frightened and annoyed her exceedingly, so that she could hardly think at length of sitting down to a meal.

Her health otherwise was quite good, and she at once submitted to the topical application which I proposed to her. I endeavoured in this case to bathe the epiglottis chiefly with the caustic solution, and soon succeeded in removing its excessive irritability, which had occasioned her so much uneasiness.

I have hitherto confined my remarks to cases of uncomplicated chronic laryngitis. It is, however, a well-known fact, that that disease is a frequent attendant on pulmonary affections, especially phthisis. Now, although in such cases the latter disease, and not the former, is that which threatens the life of the patient, and therefore deservedly engrosses chief attention, yet there are certain cases in which, by the alleviation or removal of the laryngeal affection, we are able to greatly mitigate the distress of our patient. I have formerly given a case (No. VI.) of asthma, in which a temporary cure [was accomplished by this means; and I could add many others belonging to the still graver class of phthisical patients.

Some may, perhaps, think, as I myself at first did, that this practice would be dangerous in cases of the last-mentioned disease; but I have now employed it in all stages of that malady, with more or less benefit in each case, and with injury to none. It will at once be admitted, after the cases already given, that in the early stage of phthisis, when it commences with a tickling, laryngeal cough, and perhaps occasional vomiting, the topical application of solution of caustic may be likely, as I know it is capable, of greatly diminishing for a time the irritability of the glottis and its neighbouring parts. But it may surprise some when I state the utility of the same means in some cases of acute hemoptysis.

CASE XI.—A young gentleman of stout habit, but of a phthisical diathesis, was suddenly seized with violent hemoptysis, for which he was bled from the arm, and received other appropriate treatment, medicinal as well as regiminal; nevertheless, a frequent, hacking cough continued, and seemed to

cause an almost constant expectoration of small quantities of blood. Thinking that this might be partly occasioned by irritability of the upper portion of the windpipe, I proposed to try the effect of a cautious application of the solution of caustic; and after warning him, if possible, to avoid permitting himself to retch, I did introduce the probang down to the epiglottis. I repeated this day after day, and more freely as I proceeded with impunity. In a short time I had the satisfaction of finding that the cough was removed, and with it the spitting of blood.

Even when there is a profuse purulent expectoration from one or more tuberculous abscesses in the lung, topical applications to the larynx may be used with benefit. There are no cases, it is well known, in which ulcers more frequently occur in the laryngeal mucous membrane than those just adverted to, and hence much of the pain and distress presented by them. To alleviate these symptoms most speedily and most effectually, the caustic solution must be applied to the interior of the larynx; and I am able to say, from considerable experience, that the remedy is as safe as it is sure. The following was the first case of the kind that occurred to me.

CASE XII.—The subject of it, a lady about thirty years of age, had laboured under unequivocal symptoms of pulmonary phthisis for some time previously to my seeing her; and when I examined the chest I found evidence of a considerable abscess at the upper part of the left lung. She complained of the frequency of the cough, and of constant pain within the thyroid cartilage; her voice was husky, and she was subject to vomiting. Alternations of temperature had great influence on the cough and voice. The expectoration was profuse and purulent, but never bloody.

I had treated this lady's sister, by the topical method, for a simple laryngeal cough, and had succeeded in curing it. She was therefore very naturally impressed with the idea that benefit might also accrue in her case from a similar treatment,

and urgently requested me to try it. I did so with some reluctance, but have had no reason to regret the result. The immediate effects of the application were not severe, and the benefit which followed was soon obvious; for as the irritability of the pharyngo-laryngeal membrane diminished, the cough became less frequent and less easily excited by change of temperature, the voice improved, the pain in the larynx decreased, and the vomiting became much less troublesome.

The mere removal of a group of distressing symptoms was not the full extent of the alleviation obtained in this case; for since that has been accomplished, the pulmonary abscess has not increased, while the general health and vigour have greatly improved; so that instead of the daily and visible progress of a rapid consumption, this patient enjoys prolongation of days and comparative health.

I am very far from claiming for the topical treatment of *laryngeal* disease the much-to-be-desired power of curing *pulmonary* phthisis, but I believe it capable of effecting much greater relief to most sufferers from that dreadful malady than all the farago of artificial atmospheres, inhalations, cough mixtures, &c., or even than the much-used respirator. In the early stage of phthisis the measures just mentioned are often, in my opinion, more hurtful than beneficial, interrupting as they do the general hygienic regimen which ought then to be pursued; and in later periods of the disease, in which some of them might with propriety be employed, topical applications to the larynx will often be found too efficacious to be altogether overlooked or laid aside.