of acute symptoms in various parts of the body. Such fluctuations remind one in a way of the temperature chart of a prolonged case of enteric fever, in which at irregular intervals a series of high temperatures alternates with a series of low ones, the high curve corresponding to a fresh development of toxins, the low curve corresponding to abatement of their action. It is difficult to understand how the ups and downs, which are such marked features in the clinical history of chronic nervous diseases, can be explained on the hypothesis of primary progressive degeneration of neurons owing to exhaustion of their specific vital energy, and apart from the direct action of toxins circulating in the blood.

PROGNOSIS IN RELATION TO TREATMENT.

If I am right in assuming that a poison is the most common exciting cause of diseases of the nervous system, prognosis will vary with knowledge of the proper treatment for elimination of the poison, and of the effects produced by it. But in most cases we know neither the nature of the poison nor the manner in which it enters the circulation, hence treatment is purely empirical and often fails. When we do know what the poison is, and how it is introduced into the blood, as in the case of lead, we can stop any further introduction of the poison, and then try to eliminate what is already present. Our methods of elimination, however, are still too crude for the purpose. We may employ massage and baths, administer purgatives and alteratives, and place the patient under the best hygienic conditions, often without producing any immediate result, witness the persistence of some cases of peripheral neuritis or of neuræsthesia in spite of the most energetic treatment, and our inability to stop the progress of an early myelitis.

In addition to remedies for the elimination of poisons we want others to aid us in counteracting their effects, and here we must hope for fresh discoveries regarding the effects of glandular extracts and the nature of toxins and their antitoxins.

In this connection the influence of one disease upon another is worthy of renewed investigation. Two examples may be mentioned:—A boy with whooping-cough was attacked with most severe urticaria; the whooping-cough quickly subsided. A man, whilst suffering from severe neuralgia on the right side of the neck, had an attack of bronchitis. Its onset was associated with a sudden disappearance of the neuralgia.

The possibility that a second attack of the same disease may have a beneficial effect on the symptoms left by a first attack is suggested by a case which was recently under the care of Dr. Dreschfeld. A man whilst suffering from influenza began to show symptoms of grave mental disturbance. He talked incoherently, was dull and apathetic, and passed his excreta into the bed. In a few weeks he was sufficiently recovered to take a holiday. Two months later he resumed his business, but his mental vigour was much less than before his illness. Six months after the first attack he had another attack of influenza, and was very much afraid that his former symptoms would return; but to the astonishment of himself, his friends, and his doctor, he made a rapid recovery, lost all his old symptoms, and regained complete health both mental and physical.

We have, further, to study the influence of one part of the nervous system upon another part. Thus, a knowledge of the value of sensory impulses in maintaining the proper nutrition of motor neurons affords an explanation of the beneficial effects of massage, passive movements, and galvanism as stimulants to the regeneration of damaged nerve tissue. We also recognise the important influence that cheerful surroundings, sunlight, and other psychical stimulants may have upon morbid processes, and we admit the possibility that a powerful emotion may initiate a change for the better, either by stimulating the metabolism of diseased tissue or by opening up fresh paths for the transmission of motor or sensory impulses. As Dr. Mott points out: "Consciously and unconsciously, a continuous stream of impulses is pouring into the nervous system from without by the sensory channels, which are the avenues of experience and intelligence, and our bodily and psychical life depends upon the existence of such stimuli."

A consideration of these and of other facts which, as I have indicated, may be derived from a study of pathology and of

the history of symptoms, gives us hope for the future. It suggests that further investigations—clinical, pathological, and chemical—will do much to lighten the gloom which at present surrounds the prognosis of so many disorders of the nervous system.

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- ¹ E. Lugaro, *Riv. di Patol. Nerv. e Ment.*, 1899, quoted by Ford Robertson in his *Textbook of Pathology in Relation to Mental Diseases*. ² Loc. cit.

Two Lectures

ON

SOME THOUGHTS ON THE PRINCIPLES OF LOCAL TREATMENT IN DISEASES OF THE UPPER AIR PASSAGES.

Delivered at the Medical Graduates' College and Polyclinic on October 2nd and 9th, 1901,

By SIR FELIX SEMON, M.D., F.R.C.P.

LECTURE II.

2. LOCAL MANIFESTATIONS OF GENERAL SYSTEMIC DISEASES.

Of the systemic diseases in which throat and nose complications occur, and which may require local treatment, tuberculosis, syphilis, and affections of the central nervous system are the most important. True, there are many other systemic affections in which the upper air passages may participate. Thus pharynx, larynx, and nose may be severely affected in lupus and leprosy; dry pharyngitis may be a very unpleasant symptom in diabetes; granular pharyngitis is very often found in general anæmia and chlorosis; laryngeal oedema may occasionally be observed in Bright's disease; ulceration and perichondritis of the larynx may occur in typhoid and other acute fevers; influenza may lead to empyema of any of the accessory cavities of the nose, to laryngeal paralysis and to many other complications affecting the upper air passages; gout, rheumatism, urticaria, pemphigus, actinomycosis, and small-pox may implicate nose, pharynx, and larynx; and this list could easily be extended. But the throat and nose complications in many of the affections just named are rare, and some require no local treatment whatever, except an occasional palliative; while in other instances—as in laryngeal stenosis, or in empyema of the antrum due to any of the affections named—they must be treated exactly as if the affection were purely local. Thus there is no need for me to enter specially upon them. Matters, however, are somewhat different in systemic affections belonging to the first group. Here experience has furnished us with certain valuable principles, which, in addition to the individual requirements of each case, ought always to be considered, when the question of local treatment of throat and nose complications arises.

Tuberculosis.

This applies particularly to tuberculosis. I need not speak of the frequency and importance of its laryngeal complications, which but too often, in the complex of symptoms, unfortunately play the rôle of the predominant partner, and urgently require relief. A patient suffering from laryngeal tuberculosis, who cannot eat and drink on account of the difficulty and pain accompanying the act of swallowing, will, of course, go more rapidly downhill than he otherwise would do because he is prevented from assimilating the amount of nourishment indispensable to combat the inroad of the general disease. To tell such an unfortunate person, as was generally done twenty years ago, and as is done, I am afraid, but too frequently now: "Take care of your general health and let your larynx take care of itself" is to my mind not much better than a cruel mockery, though it is, of course, not intended as such. Unfortunately he who gives that cheap advice altogether forgets to instruct the patient how he is to take care of his general health when he cannot swallow. Here it is obviously the duty of medical art to step in and help, and the only question is whether this help should be of a purely palliative, or, if possible, of an actively curative character.

Now this question, simple as it seems, is extremely difficult to answer, and nothing could better illustrate what I have said in my first lecture as to the frequently shifting character of modern therapeutic views than the various answers given to it in the course of the last twenty years.

As recently as 1881 the late Professor Krishaber, of Paris, stated verbatim in the discussion on the pathology of laryngeal phthisis which took place at the International Medical Congress of London, as the result of his long and extensive experience: "I will not say that tuberculous laryngitis is incurable. I maintain only that the local therapeutic means in use are ineffective, and that they are damaging rather than useful." Although most of the other speakers on that occasion did not take so gloomy a view, yet the general opinion was anything but cheerful with regard to the influence of local measures upon laryngeal tuberculosis. Shortly afterwards, however, Professor Krause, of Berlin, introduced the lactic acid treatment, and this in turn was quickly followed by its combination with scraping of laryngeal tuberculous ulcers. The most enthusiastic advocate of this method was Dr. Heryng, of Warsaw, who for a good many years never tired of extolling its virtues, and demonstrating at medical gatherings patients with "cured" laryngeal tuberculosis, and instructive specimens of completely cicatrised laryngeal ulcers from patients who later on had succumbed to the ravages of the pulmonary disease. The pendulum of public opinion now swung in the exaggeratedly hopeful direction. Any number of "cures" of laryngeal tuberculosis were reported, and more and more energetic surgical measures for its treatment were recommended: deep scarification of the swollen epiglottis and aryteno-epiglottic folds; removal of diseased arytenoid cartilages; thyrotomy and scraping of the whole laryngeal mucous membrane; nay, even removal of the whole larynx, each found its enthusiastic advocates.

In the midst of all this progressively radical surgical treatment the introduction of tuberculin for a short time threatened to supersede it altogether. No better field for observation of the effects of the magic fluid could be desired than the larynx. We all injected, and waited in breathless silence for the healing and the cicatrization of the laryngeal ulcers. But, alas! our hopes were doomed to disappointment; beyond the fact that the ulcers assumed a somewhat cleaner aspect no curative effect was observed, and within a very few months from the introduction of the treatment, the man, whose eightieth birthday the whole medical world prepares to celebrate this week with great rejoicings, my venerated great teacher, Professor Virchow, added to the countless obligations under which he had laid our science, by showing beyond doubt the dangers of the new method. As a result of his demonstration it was, except by a very few faithful adherents, thrown over as suddenly as it had come into fashion, and we all returned to combating the local effects of the disease by local means. But somehow the enthusiasm had cooled down, and during the last few years very little has been heard of the local treatment of laryngeal tuberculosis in comparison with the panegyrics of some ten years ago. On the most recent occasion when the question was discussed—namely, at this year's meeting of the British Medical Association—many speakers related their views and experiences concerning the indications, forms, and results of the local treatment of laryngeal tuberculosis, but no new facts were elicited; and Dr. StClair Thomson—rightly, I think—stated that practically no progress had been made during the last six or seven years, and that the subject was in a very unsatisfactory condition.

The views I have myself formed from personal experience on the question of local treatment in laryngeal tuberculosis are the following:—

In the first place, I think we should as much as possible avoid the word "cure" when speaking of the chances of such treatment, for it is distinctly misleading in this connection. We have to deal with local manifestations of systemic disease, not with a purely local process; and even if we succeed in arresting the particular local manifestations against which our efforts are directed, we cannot, unfortunately, promise our patient that the arrest will be a permanent one, nor that, even if the exact spot in which we have been working should lastingly remain free, quite similar manifestations, causing

similar painful symptoms, may not within a very short time after the end of a really successful treatment break out in the immediate vicinity of that spot. The disappointment under such circumstances is always cruel. Nevertheless, seeing that it is our first duty to give relief if we possibly can, and that there is, at any rate, a fair chance of the result being permanent, we must, of course, have recourse to proper local treatment in suitable cases; but, in view of the uncertainty just named, it will be wise, and may spare the patient and his friends bitter disillusion, not to talk of a "cure," but of relief which we trusted would be more than passing, although that could not be definitely promised.

Secondly, in no disease perhaps is there greater need for individualisation and for treating each case on its own merits than in laryngeal tuberculosis. Simply to identify, as I am afraid is done very often, the presence of that complication with the idea that it must be actively treated with lactic acid, and possibly by curetting, would be a mistake similar to identifying the diagnosis of laryngeal cancer with the idea that thyrotomy must be performed. In both instances routine practice would ultimately and inevitably lead to valuable methods becoming discredited. When deciding whether any and if so what form of local treatment should be adopted in laryngeal tuberculosis, everything—the form, the situation, and the extent of the local manifestation has to be carefully considered. So long as there is merely infiltration within broken surface, be this infiltration of a pseudo-œdematous or of an indurative form, I strongly advise in principle to leave matters alone. I know that some authorities recommend submucous injections of guaiacol, creosote, or perchloride of mercury, etc., and others removal of the tumefied parts by means of curettes, forceps, snares, followed by energetic applications of lactic acid. Of the submucous injections I have no personal experience. Of the surgical measures named, I admit that in some cases the dysphagia is so great that energetic procedures may have to be resorted to. In a case of my own in which, so far as could be judged, the epiglottis alone was the seat of an enormous tuberculous infiltration, which rendered swallowing practically impossible, whilst there was no evidence of pulmonary disease at all, the whole of the epiglottis was removed after subhyoid pharyngotomy with temporarily very satisfactory, though unfortunately but transitory, results. A year after the operation both lungs were found to be extensively diseased, and ulceration had occurred in the stump of the epiglottis and in the neighbouring parts of the cicatrix.—But, unless the dysphagia renders drastic measures imperative, I feel sure it is much better in cases of tumefaction without ulceration not artificially to produce a breach of the surface, and I think that the correctness of that advice is being gradually and more generally followed. If the tumefaction be so considerable as to produce serious laryngeal stenosis, tracheotomy may be indispensable to prevent suffocation, and a few cases have been reported in which the rest given by that operation to the diseased organ appeared to have an actually curative effect upon the laryngeal infiltration. But this is a result which certainly cannot be expected to follow regularly, and on the whole it will be much better to reserve the operation for urgent cases only.

Should there be already ulceration when the patient comes under observation, the questions of its situation and its extent are of paramount importance. If there be one ulcer or a few not too large and well-circumscribed, the chances of arresting the local mischief by appropriate local treatment are by no means bad, particularly when the ulcers are situated on the vocal cords, the ventricular bands, or in the interarytenoid fold. Ulcers of the epiglottis, the mucous membrane over the arytenoid cartilages, the aryteno-epiglottidean folds, or in the subglottic cavity are not nearly so easily accessible to local treatment. Should the ulceration be almost universal and be accompanied by caries and necrosis of the cartilaginous framework of the larynx or of large parts of it, the curative chances of local treatment are very small indeed.

The local treatment will accordingly have to vary greatly under these different circumstances. In cases belonging to the first category, energetic lactic acid treatment, if necessary, combined with scraping or removal by double curette or cutting forceps of the tuberculous deposits, will sometimes

yield very gratifying results. I now look back upon a number of cases of my own thus treated, not large, it is true, but still gratifying enough, in which treatment of this kind has resulted in lasting arrest of the laryngeal mischief. One ought even not to be discouraged if, either in the scar of the hardly-healed ulcer or in its neighbourhood, fresh ulceration should occur. In a few of my own cases repetition of the treatment—which occasionally had to be resumed several times at longer or shorter intervals—ultimately led to lasting cicatrization and freedom from pain and dysphagia. But no general rule can, I think, be laid down about such repetitions of the treatment, and I cannot sufficiently emphasise that in this large category every case must be treated according to its individual features.

In cases belonging to the second class the technical difficulties are much greater; the affected parts recede under the touch of instruments, and as a rule the results are less satisfactory than those obtained in the interior proper of the larynx. Still, so long as there is a reasonable chance of arresting the process, I consider it not merely legitimate, but clearly indicated, to try and do so, as it is just in these cases of commencing ulceration of the epiglottis, the mucous membrane over the arytenoids, or the aryteno-epiglottic folds, in which the concomitant pulmonary process may not be at all much advanced, that the patient's chances are most jeopardised by the dysphagia depending upon the laryngeal complication. Should intralaryngeal measures fail and the dysphagia be excessive, or should a subglottic ulceration spread to the posterior wall of the larynx, external operations may be considered. In a few cases of that kind thyrotomy, followed by thorough scraping and application of pure lactic acid to the seat of the former ulcer, has yielded satisfactory results. In a case of my own thus treated the patient has now, I am glad to say, remained quite well for four years. But the external wound in these cases is very apt to become infected during the operation, and a second extensive operation may be necessary to remove the infected tissues. This occurred in my own case and in various others that have been reported. Hence operations of this kind should not be lightly undertaken, and should be reserved for exceptional cases. They may of course be absolutely required if laryngeal tuberculosis should manifest itself, as it occasionally, though rarely, does in the form of a distinct tumour, which cannot be removed intralaryngeally.

In the third category, in which the whole, or nearly the whole, of the mucous membrane of the larynx is one mass of ulceration, and in which there is often in addition evidence of perichondritis and chondritis or even of caries, necrosis, and exfoliation of one or several of the laryngeal cartilages, curative local measures are, in my experience and belief, practically out of the question. Very heroic procedures, I know, are sometimes undertaken even in this class of cases, necrotic arytenoids are removed *in toto* with their swollen and ulcerated mucous coverings, and pure lactic acid or very strong solutions of that drug are forcibly rubbed in all over the larynx. I am not aware that such measures have ever acted beneficially, whilst they may intensify the violence of the local process, and they are certain, in spite of previous cocaineisation and subsequent orthoform insufflation, to increase for a time the patient's sufferings. To remove a tuberculous larynx deliberately I consider hardly justifiable. Palliative local measures alone are, in my opinion, suitable in the great majority of this class of cases, and nothing has so well served me to soothe the pain and render swallowing possible as insufflation of orthoform. Its effects last much longer than those of cocaine, menthol, or morphine, and its dose has not to be rapidly increased like that of the drugs just named. Nor are general toxic symptoms ever observed. It has been accused of producing sloughing; I have never seen it cause such an undesirable effect.

Thirdly, in cases of laryngeal tuberculosis the patient's general health and pulmonary condition have always to be taken into consideration when deciding upon the question of local treatment. It must not be thought that even somewhat advanced lung disease or slight habitual feverishness necessarily contraindicate local treatment of the larynx. I have often enough seen general beneficial results even under such conditions from arresting the laryngeal complication. But when practically the final stage of pulmonary phthisis

has been reached, with marked hectic fever and cachexia, or when the tuberculous process is of the miliary type, I consider local treatment of the larynx other than palliative distinctly contraindicated, and I would strongly warn against unduly exalting the laryngeal complication under such circumstances at the expense, as it were, of the pulmonary disease.

Fourthly and finally, it is most important when local treatment has been decided upon in a case of laryngeal tuberculosis, that it should be efficiently carried out. This would seem to be almost a truism, but indeed it is not, and I think some plain speaking here is necessary.

Within my own knowledge often enough when energetic lactic acid and curetting treatment has been recommended, that advice has been only partially carried out, and in such a half-hearted way as to make it practically ineffective. Whilst the *rational* of the treatment consists in the removal of the tuberculous ulcer and in the production of a healthy cicatrix, which purposes can only be obtained by thoroughly scraping the diseased area, or even removing parts of it with cutting forceps or double curette, and by subsequently energetically rubbing into the raw surface left behind a strong solution of lactic acid, carried to the part on a strong, stiff, properly-bent instrument, such as Krause's wool-carrier—all this, be it remembered, under the guidance of the laryngeal mirror—I find that the first part of the treatment, namely, the removal of the tuberculous tissue, is often omitted altogether, and that the rubbing in of the strong lactic acid solution is replaced by the application "somewhere" in the throat of a weak solution by means of a camel-hair brush, or by the substitution of a "weak spray of lactic acid." The result is of course *nil*, and the patient, who had been encouraged to hope for relief, is greatly disappointed. I venture to say that this is hardly fair, either to the patient, the method, or to the original adviser. I certainly consider it much less—if at all—derogatory for a medical man to frankly tell his patient that the suggested treatment to be effective demanded an amount of special technical skill which he did not possess, and that he therefore would advise him to put himself in practised hands to have it properly carried out, than that he should spoil fair chances by ineffective execution. The simple truth of the matter is that this treatment should as much remain in the hands of experts as, say, the intralaryngeal removal of intralaryngeal growths. However, I may add that seeing the frequency of laryngeal complications in pulmonary tuberculosis, and the encouraging results of the sanatorium treatment of the latter, every physician attached to a sanatorium should, I think, make himself enough of an expert to effectively carry out during the patient's stay at the sanatorium the local treatment of laryngeal complications if required.

I know full well that what I have said about the principles of local treatment in laryngeal tuberculosis does not nearly exhaust the subject. Thus, I have not so much as mentioned the necessity of combining in all cases a rational general with the local treatment. But this I hope I may take as self-understood, and I trust that my remarks, incomplete as they are from pressure of time, may help you to decide in doubtful cases whether any, and if so what, form of local treatment should be adopted. I have only to add that in pharyngeal tuberculosis, which fortunately is very rare, the energetic application of strong lactic acid solutions has been at least temporarily beneficial in the very few not hyperacute cases I have seen, whilst in the very acute form I consider that only palliatives are desirable.—In nasal tuberculosis, which also is rare, the tuberculous deposits and ulcers should be thoroughly removed and cleaned by scraping, followed by lactic acid applications. Unfortunately, however, there is a great tendency towards recurrence in this form, no matter how thoroughly the local treatment may have been carried out.

Syphilis.

Of the next disease on our list, syphilis, I need only say that I have for many years ceased to include local treatment as a routine measure in the treatment of specific affections of the upper air passages. This, of course, does not mean that I oppose local treatment in this class of cases if actually required. On the contrary; in cases, for example, of caries and necrosis of the bones in tertiary syphilis of the nose, of

extensive adhesions in the pharynx as a result of tertiary ulceration of that part, of fibroid stenosis or advanced perichondritis of the larynx of syphilitic origin, local treatment, and this of the most energetic kind, may have to come into play. But what I mean is that in my experience no daily applications of sulphate of copper or nitrate of silver to the ulcerating surfaces are required in addition to proper constitutional treatment. I served my specialistic apprenticeship in a school in which such applications were considered most important, but, as I have already stated on a previous occasion, since I have gradually discontinued them and relied upon constitutional treatment only, I have not found that improvement has taken place more slowly than in former days.

Central Nervous Disease.

We next come to affections of the upper air passages, due to diseases of the central nervous system, which may require local treatment. Two questions here particularly demand consideration: the electric treatment of functional aphonia and the indication for tracheotomy in bilateral paralysis of the abductors of the vocal cords due to tabes.

With regard to the first of these two points, you know that countless methods have been recommended for the treatment of functional paralysis of the abductors: massage of the neck, compression of the alæ of the thyroid cartilage, hypnotism and suggestion, methodical exercises of articulation, cold douches, pulling forward of the tongue, deep narcosis, on awaking from which the patient is engaged in conversation, etc. Without doubting the efficiency of other measures, I personally adhere to the use of electricity as the quickest means of restoring the voice. But I urgently advise you to proceed energetically in these cases, and to employ at once intralaryngeal faradisation, as I have but too often found that previous timid or gentle external application of electricity greatly deadens the patient's response to the electric stimulus, which otherwise, in my experience, usually has an almost miraculous effect even in long-standing cases. I think that every experienced laryngologist will support this statement.

Concerning the second question, namely, when tracheotomy is indicated in bilateral paralysis of the abductors of the vocal cords in tabes, I hardly venture to give an apodictic advice.

More than twenty years ago I proposed that in every case of bilateral, well-developed paralysis of the abductors in which it was impossible to bring about by suitable treatment a greater widening of the glottic space, prophylactic tracheotomy should be performed in order to secure the patient from the ever-present danger of suffocation. That advice, I think, has been very generally acted upon, and it certainly offers the best chances to the patient. But since then we have learned that in cases of tabes sometimes, though by no means always, paralysis of the internal tensors and of the interarytenoid muscle supervenes years afterwards upon the original paralysis of the posterior crico-arytenoid muscles, and results in a wider opening of the glottis, and a diminution of the danger of sudden suffocation. A considerable dilemma has thus arisen. If one sees, as I have actually seen, quite a number of tabic patients who have lived with an extremely narrow glottis for a number of years without apparently suffering much inconvenience, and without ever having had a really serious attack of choking; and if one remembers in addition that the condition, as just stated, may actually improve slightly of its own accord, one fears to be accused of "lust of operation," if one, nevertheless, insists on prophylactic tracheotomy. If, on the other hand, we bear in mind that these patients live under a constant cloud of being killed, before medical aid can be called in, by a simple intercurrent laryngeal catarrh; that some of them have actually died from sudden asphyxia; that others have only been saved by a hair's breadth by means of hurried tracheotomy; and, finally, that after such hurried tracheotomies performed for chronic obstruction, unpleasant pulmonary complications are anything but rare, the possible consequences of postponing the operation must seriously weigh upon our mind. The best policy under these circumstances would seem to be fully to explain the situation to the patient's general medical adviser, or, failing him, to the patient himself or to his family, and not to bear the responsibility alone.

3. LOCAL MANIFESTATIONS IN NOSE AND THROAT, DEPENDENT UPON LOCAL DISEASE OF CORRELATED AREAS.

That not only systemic diseases, but also local affections in areas anatomically or otherwise connected with the upper air passages may engender trouble in these parts is a well-known fact. I need only remind you of laryngeal paralysis due to compression of the vagus or recurrent laryngeal nerves by aneurysm of the aorta, cancer of the oesophagus, enlarged mediastinal or cervical lymphatic glands, or of tracheal stenosis due to pressure from a fibroid or malignant goitre as examples of such contingencies. You know equally well that in such cases, whilst symptomatic treatment may be required locally, it must be our aim to remove, if possible, the original source of the trouble. All this is so self-evident that I should not even have mentioned it, were it not that the sound principle just referred to, namely, that if possible the original cause should be removed, instead of the secondary result merely being symptomatically treated, has of late unfortunately been exaggerated in this connection to such a degree that it seems time to seriously protest against this exaggeration.

I refer to the influence which is nowadays believed by some to be always exercised by the state of the nose upon inflammatory conditions of the pharynx and larynx. That such an influence exists within certain bounds, and provided that there is actual chronic stenosis of the nasal passages is, of course, undeniable, and has been directly admitted by me in my first lecture. One of the most important functions of the nose is to moisten, to warm, and to purify the inspired air. If that function is abolished or greatly diminished in consequence of permanent obstruction, it goes without saying that inflammatory conditions in the pharynx, larynx, and lower air passages will be more likely to occur, and less likely to be remedied by topical treatment of the inflamed parts, than if the nose were fulfilling its normal functions. Under such circumstances it will, therefore, be just as much the practitioner's duty to remove the chronic obstruction of the nose, be it due to polypi, deviations of the septum, enlargement of the turbinated bodies, or whatever else, and not to be satisfied with mere symptomatic treatment of the pharyngeal or laryngeal inflammation, as it would be, not merely to relieve the dyspnoea caused by a hard goitre by tracheotomy, but to remove the goitre itself. But this legitimate and rational position has unfortunately not satisfied the ambition of that section of modern rhinologists for whom the nose is the centre of the pathological universe. Gradually the equally deplorable and ridiculous doctrine has been developed that such a thing as a primary inflammatory process in the air passages below the nose did not exist at all, and that when inflammations occurred in these parts one had always to look for their starting point in the nose. This sounds almost incredible, but nevertheless is perfectly true. Some time ago a case of laryngeal perichondritis was shown at a society of specialists. Opinions were divided as to whether tuberculosis, syphilis, or malignant disease was the cause, when one gentleman rose and asked the demonstrator in all seriousness whether he had observed that the patient had got a spur in his left nostril?—

The worst of it all is that these views are not merely held theoretically, but that they are actually carried into practice! Let me give you a few very characteristic illustrations from my own experience. Some time ago I saw a patient suffering from laryngeal cancer, which appeared in the form of a general infiltration of the mucous membrane of one-half of the larynx. Before the patient came to me he had been treated by another specialist with nasal inhalations for the hoarseness which was the initial symptom of the disease!—Another patient, a well-known actor, had just produced a new play, the success of which almost entirely depended upon his own performance, and which promised to be very successful, when he was prostrated by influenza. The run of the piece had to be interrupted, and the patient in despair returned to his work before the acute stage was over. He became hoarse the first night, and quite aphonic the third. He then consulted a staunch believer in the omnipotent influence of the nose, who declared that a somewhat biggish operation in that organ, about the nature of which the patient could not give particulars, was indispensable for the restoration of the vocal powers. As the patient had never in his life had

the least trouble from his nose, he asked his usual medical adviser whether he should submit to the operation, and that gentleman suggested that he should consult me first. I found nothing whatever in the nose that in my opinion required operation, but there were marked congestion and swelling of the vocal cords, such as was natural enough after an attack of influenza and premature forced use of the voice. A few days complete vocal rest and applications of astringents to the larynx effected a lasting cure.—In the third case the patient, a stockbroker, had got chronic laryngeal catarrh from habitual overuse of his voice in the Stock Exchange. Before he came to me he had been treated for fully six months by removals of crests from the nasal septum and by chemical and galvanic cauterisations of the mucous membrane covering the turbinated bones, although he had never had the least discomfort in his nose. And so strongly convinced was his medical attendant evidently that it must be the nose which caused the laryngeal trouble, that it never occurred to him to treat the really affected part—that is, the larynx. The same treatment as that adopted in the previous case effected a complete cure within a few weeks.

But the most drastic example I have ever seen of "nasal prejudice," if I may so call it, was afforded to me only a few months ago. An extremely neurotic gentleman had when a student at Oxford twenty years ago frequently suffered from severe abdominal pain, for which he several times consulted one of our most painstaking physicians, who, however, never discovered any organic cause of this neuralgia. Later on the patient emigrated to one of the colonies, made a position for himself, and entered public life. Having on some occasion been compelled to make a series of public speeches, although he was already hoarse when he started, his vocal powers in the end failed him, and he felt a good deal of pain in his throat when speaking. He consulted a local specialist, who told him that he had not only chronic laryngitis, but also swelling of the turbinates. Previous to this the patient had never been conscious that there was anything amiss with his nose. Nevertheless, he was treated for several months with a series of cutting operations in his nose, after one of which secondary hæmorrhages so serious and repeated occurred that the nose had to be plugged repeatedly, and that the worst was feared for a time. At the end of it all the patient became thoroughly neurasthenic, and his doctor advised him to return to Europe, and to see the physician who had treated him for his abdominal pains. That gentleman sent him on to me, as he could discover no organic mischief anywhere. The patient, a tall, well-built man, when entering my consulting room, told me in a perfectly natural sonorous voice, that he had come to consult me about his throat. The next sentence was spoken in a absolutely toneless whisper. He begged me to let him whisper, as it "hurt" his throat when he spoke in his natural voice. Examination showed that the larynx, with the exception of very slight congestion of the vocal cords, was perfectly normal. Nothing abnormal could be detected in his nose, nor in the rest of his air passages. In short, it was a case of true "phonophobia." A consultation was held with his London physician and his colonial adviser, who happened to be in town, and it was decided to let him undergo a rest cure. I have just heard that his throat and voice are all right now, but that he still complains of occasional pains in his abdomen and hands, and that he thinks of trying hypnotism for these complaints.

Here, then, are four cases, gentlemen, which have the common characteristic that the cause of the patients' complaints was sought for in the nose, although they had never suffered the least inconvenience in that organ, and although there was—in the first three cases, at any rate—a fully sufficient explanation of their complaints to be found in the actual condition of the larynx and in the previous history. One of them escaped—fortunately for him—what would have been an absolutely uncalled-for operation in the nose; in the three other cases the nasal treatment was a dismal failure. These cases, therefore, show the actuality of a movement which I am convinced runs equally counter to the interest of the public and to the esteem in which I wish rhinology to be held by the profession, and they fully justify, I think, my warning that it is high time to drop the fanatic and narrow-minded notion that in all inflammatory affections of the pharynx and larynx the cause must be sought for in the nose.

By all means make it a practice to examine that organ carefully in all cases of inflammatory or obscure disease of the air passages, and when you detect a degree of nasal obstruction which gives legitimate reason for concluding that without its relief the affection lower down would either remain obdurate or speedily recur, remove it, or treat it otherwise appropriately; but when there are such obvious and sufficient explanations of the patients' complaints, as in the cases just narrated, do not blind yourself and run the risk of serious misunderstanding of your motives by assuming that some ridiculously small deviation from the normal, which you may happen to detect in the nose, must be the cause of all the trouble.

4. AFFECTIONS OF THE UPPER AIR PASSAGES SUPPOSED TO EXERCISE AN INFLUENCE UPON OTHER ORGANS AND PARTS OF THE BODY.

In a sense this division is a direct continuation of the preceding one, inasmuch as we shall in it again witness the regrettable spectacle of an originally sound principle being hunted to death through being ludicrously exaggerated. This applies to both forms in which an influence may be exercised by affections of the upper air-passages upon other parts of the body, the direct and the reflex. Let us first consider the former.

A. Direct Influence.

It goes without saying that such an influence exists, and that often enough it is most marked. When an acute or chronic catarrh or inflammation spreads from the nose through the naso-pharynx and the Eustachian tubes to the middle ear, and effects corresponding changes in that organ; when owing to the mechanical obstruction caused by adenoid hypertrophy the type of the face alters, deafness is produced, and pigeon-breast is formed; when chronic septic poisoning is being produced by the constant absorption of purulent nasal discharges into the system; when in chronic stenosis of the larynx or trachea, pulmonary troubles, emphysema and chronic bronchial catarrh, cardiac dilatation, renal stasis and its sequels arise through impeded interchange of gases in the lungs—the relationship of cause and effect is at once obvious, and in all these cases, when the question of treatment is discussed, the grave consequences which may result for other organs or for the general health, if the affection of the upper air-passages be allowed to continue unhindered, will have to be taken into serious consideration.

But here, again, zeal has too often, unfortunately, greatly outrun discretion. That *enfant terrible* of modern medicine—the nose—is, in the opinion of some of its more stubborn devotees, the source of most, if not of all, our woes, and even lesser degree of so-called "nasal inadequacy" possesses, to listen to them, an importance which I, for one, do not admit. Their frequency I will not contest. In fact, I verily believe that if the severe standard of nasal patency which some rhinologists apparently demand were compulsorily introduced tomorrow, a very large proportion of mankind would have to be subjected to a series of "patefying" operations (if I may coin that word). Now, if people who are inconvenienced by the fact that they cannot breathe as well through one of their nostrils as through the other chose to undergo an operation for an improvement of this condition, that is their own business, and concerns nobody else; but matters seem to me rather different if such operations are proposed and undertaken, as they nowadays frequently are, because dire consequences are apprehended and predicted for the general well-being, and more particularly for the auditory functions of the patient, on account of lesser degrees of nasal insufficiency, or because a patient who suffers from sclerotic middle-ear or labyrinthine disease at the same time has got a spur or a deviation of the septum or some swelling of the nasal mucous membrane. I do not pretend to be an aurist, but I hope I possess an average quantity of common sense, and I must freely confess that it is perfectly unintelligible to me how a slight degree of obstruction of the nose proper, particularly when it is one-sided, can be believed to exercise that disastrous influence upon the ventilation of the middle ears which I so often see ascribed to it. Pray do not misunderstand me here. I speak, of course, of stenosis of the nasal chambers proper only, not of actual occlusion or obstruction of the Eustachian tubes. The very great and

important difference between these two conditions is, it seems to me, hardly taken sufficiently into account at the present moment. That total obliteration or any serious diminution of the lumen of the Eustachian tubes—be it induced by a disease primarily situated in the naso-pharynx, or directly propagated from the nose to the tubes through the naso-pharynx—must entail a far-reaching influence upon the ventilation of the middle ears, and thus upon the whole auditory apparatus, goes without saying. But the matter is very different, indeed, if the stenosis is limited to the nose proper and if the naso-pharynx itself remains free. Under such circumstances—that is, when the naso-pharynx is ventilated through the mouth—the atmospheric pressure in it surely remains exactly the same as if it were ventilated through the nostrils, and I see not the least reason why any disturbance in the ventilation of the middle ears should result. If I should be asked here—Why, then, transitory slight deafness should so often accompany an ordinary “cold in the head,” I should answer: Because in such cases the swelling and congestion is not limited to the mucous membrane lining the interior of the nose, but actually extends through the naso-pharynx into the Eustachian tubes. When, however, the naso-pharynx itself remains free, the obstruction in the nose may be very considerable or even absolute, and yet no deafness nor any other symptoms on the part of the ears need follow.

This is no theory; it is a stern fact. If mere partial obstruction of the nose proper could exercise that great influence upon the auditory apparatus which is claimed for it, surely ear complications ought to be regularly present in a class of cases in which nasal breathing is entirely or nearly entirely abolished—namely, in cases of multiple nasal polypi. Now, for many years, I have paid special attention to that question, which seems to me to be of great importance in the consideration of the point under discussion, and I am able to state, on the basis of a large material, that even in cases of complete obstruction of both nostrils by multiple polypi, ear complications of any kind have been extremely rare in my practice. And if further evidence were needed, it is afforded by the fact that even in cases of complete bilateral congenital occlusion of the choanae by bony or membranous diaphragms, perfect hearing power and absence of any other aural symptoms has been observed by others as well as by myself.

You will understand, then, that I profess myself to be rather sceptical concerning the asserted great influence of nasal stenosis without concomitant chronic catarrh upon all possible ear troubles, and that I look upon an endeavour to improve labyrinthine disease by removing a crest from the nasal septum with feelings much akin to those which animate me when I see primary inflammations of the larynx treated by way of the nose. In connection with this, I was very glad to see that in the discussion which took place at Ipswich last year on the question whether, since the introduction of modern rhinological methods, direct and considerable progress had been made in the treatment of ear affections associated with simple nasal stenosis, the general verdict was much less enthusiastic than would appear from some individual utterances and publications.

B. Reflex Influence.

Here we come to the subject of “nasal reflex-neuroses,” in my humble opinion one of the most unsatisfactory in modern medicine. I have only recently treated that subject in a special lecture, and have since then seen no reason to modify, or to add to, the views I expressed on that occasion. Permit me, therefore, freely to quote from my lecture what I consider its salient points, and to answer an objection that has been raised against my statements by Dr. Dundas Grant.

In 1884 the late Professor Hack of Freiburg stated that conditions of nervous hyper-excitability in the most various parts of the human body could and did take their origin from a sudden and transitory swelling of the cavernous tissue covering the anterior ends of the lower turbinated bodies. The reflex irritability of the nasal mucous membrane was, according to him, dependent upon the expansibility of certain “erectile organs” (“*Schwell-Organen*”) situated within them. The latter being irritated at first, the cavernous spaces themselves were filled with blood. The congested condition of the nasal mucous membrane appeared to act as a stimulus for

excitation of the nerve-end apparatus, and then reflexes, most frequently secretion of tears and of serous fluid from the nose; later on sneezing, occurred. From this hypothetical reasoning, Hack further concluded that the nasal erectile organs formed a sort of link between various forms of nerve irritation. On the one hand, he considered it quite possible that a reflex irritation could produce congestion of the cavernous tissue. On the other hand, he thought that nervous symptoms manifesting themselves in different parts of the body could originate from the congested state of the cavernous tissue of the nose. Starting from this hypothesis, he reasoned that if one eliminated by operation the supposed connecting link, namely, the erectile organs situated in the nasal mucous membrane, one might succeed in curing many of the obscure neuroses which, in his opinion, had their origin in the nose, and which, so far, had obstinately resisted all possible methods of treatment.

Hack's original list of these was large enough in all conscience, including as it did spasm of the glottis, nightmare, asthma, attacks of spasmodic cough, megrim, supra-orbital and other neuralgias, amblyopia and amaurosis, erythema or pseudo-erysipelas of the nose, giddiness, epileptiform attacks, secretory neuroses, ciliary scotoma, headache, hay fever, etc.; but this list sinks into insignificance when compared with the additions which his followers soon made: Graves's disease, diabetes, irregularity of the heart's action, tachycardia, stenocardia, angina pectoris, cardialgia, diseases of the stomach, dysmenorrhoea, chorea, enuresis nocturna, melancholia, neurasthenia, catarrhal affections of the air-passages, epiphora, hyperæmia and œdema of the conjunctiva and the eyelids, blepharospasm, strabismus, pupillary changes, errors of accommodation, asthenopia, narrowing of the field of vision, anomalies of the ears and of the genital sphere, spasm of the facial and other motor nerves, muscular pains, stiffness of the neck, exudations in the joints, changes of the skin, etc.—all these were added, and as Professor Jurasz has truly remarked: “One was almost induced to believe that a great part of general pathology was dominated by morbid reflexes from the nose.”

Nor did the current of opinion remain within the limits of theory. Whenever anybody suffering from an obscure neurosis had the misfortune to fall into the hands of a rhinological enthusiast, particularly within the first few years after Hack's publication, the cause of his ailment was detected in his nose, and treated accordingly. Hack's followers were not satisfied with the original discoverer's limitation of the zone of reflex irritability to the anterior ends of the lower turbinate bones. In rapid succession it was found out that such zones also existed in the posterior ends of the lower and in the middle turbinate bones (this addition was made by Hack himself), and in the septum (Baratoux and Heryng); and the matter reached its climax when it was stated that excitation of certain parts of the nasal mucous membrane was responsible for certain forms of reflex neurosis. Forstenenson (Pan-American Congress, 1892), according to Jurasz, stated that he had discovered the specific point of excitability in no fewer than four hundred cases of asthma in the upper part of the septum. Fliess, according to the same authority, found a corresponding point for nervous cardialgia of nasal origin in the anterior third of the middle turbinate bone, for the abdominal pains of dysmenorrhoea in the lower turbinate bodies, and for the pains in the small of the back observed in the same affection in the tuberculum septi! Cough for some time seemed to have no other origin than in the nose. I vividly remember how, in 1885, a patient was sent to me with a letter by a German *conférencier*, who requested me to finish the intranasal treatment of the patient's cough, which he had started, he thought, with marked effect—a view from which I regret to say the patient's own opinion differed. When I found that the latter, besides various constitutional signs of pulmonary tubercle, showed evidences of consolidation of both apices, and a temperature of over 100° at 6 P.M., I did not feel quite justified in finishing the intranasal treatment!

Above all other affections, however, asthma was declared to be most frequently of nasal origin, and to demand energetic treatment applied to the nose. Who can count the number of luckless asthmatics whose noses have been burned between 1882 and the present day? Personally, I was not at all

over-sceptical, or prejudicially inclined against the new doctrine. On the contrary, having previous to Hack's publication, observed a few cases myself which seemed to lend colour to it, I was quite prepared to look upon Hack's statements as opening up a new era for rhinology. But when, in quick succession, in a number of cases of asthma, megrim and neuralgia of the fifth nerve, which I had most carefully selected according to the principles laid down by Hack himself, the effect of the treatment remained perfectly negative, I became more sceptical, and I regret to have to say that this scepticism, to which I gave expression in 1884 in the German edition of Mackenzie's textbook, has not been changed by my subsequent experience.

Not that I wish to be understood as if I altogether denied the possibility of reflex-neuroses taking their origin in conditions of abnormal excitability of the nasal membrane. Such a position of absolute negation, in my opinion, would be as unjustifiable as the excessive enthusiasm even now displayed by some adherents of Hack's doctrine. It cannot be denied, and shall not be denied, that in some cases in which an acquired or hereditary predisposition to nervous ailments goes hand in hand with a local hyper-irritability of the nasal mucous membrane and of the nerve-end apparatus expanded in it, occasionally reflex-symptoms, and of a severe type too, may be produced in other spheres. I have myself successfully treated a few cases of asthma of nasal origin; I have in an isolated case been able to produce with mathematical regularity an attack of most violent spasmodic cough as soon as I touched with the probe a small spot in the middle third of the septum nasi on the left side, and I have observed a case in which night terrors, spasmodic sneezing, and asthma disappeared in proportion to the reduction of morbid conditions in the patient's nose. After such and similar experiences, it would be folly to condemn the whole doctrine of nasal reflex-neuroses as fallacious and misleading; but I am deeply convinced (1) that the frequency and importance of the influence of the nasal mucous membrane upon nervous phenomena at distant parts has been grossly exaggerated by the adherents of the doctrine; (2) that we have no real understanding as yet of the mechanism of these reflex processes; (3) that it is most difficult to determine whether a neurosis really is of nasal origin or not; and (4) that it is equally difficult, whether, in cases in which a nasal origin seems to be likely, treatment directed to the nose will benefit the patient.

All we can say is that in a certain number of cases physiological reflexes are produced from the nose, just as a reflex cough is sometimes produced from the external auditory meatus, and that what is true of the physiological sphere, equally applies to the pathological. The affection which I think may practically serve as a type of nasal reflex-neuroses is hay fever. Here, indeed, we see that in a number of cases in which the mucous membrane is in a pathological condition, judicious treatment of that part just previous to the periodical complex of symptoms (sneezing, rhinorrhœa, conjunctivitis, epiphora, asthma) which constitute a complete attack of hay fever, in a considerable proportion of cases either stops the attack completely, or at any rate curtails its duration and diminishes its violence. This is a fact which I have often enough observed myself in the course of the last twenty years. Similar beneficial effects, although without anything like a similar frequency, may be observed in cases of genuine bronchial asthma, complicated by the existence of nasal polypi. Thorough removal of the latter in a number of these gives the patient lasting or temporary freedom from his asthma without any other treatment being employed. The relationship of cause and effect in some of these cases is very striking, inasmuch as on the return of the polypi the asthma occurs again, to disappear anew when the nasal disease has again been successfully treated.

Far be it also from me to doubt the possibility that other nervous affections may be beneficially influenced by the treatment of morbid conditions of the nose. Considering the intimate relationship of the fifth nerve to so many of the other cranial nerves, particularly the pneumogastric, and also to the sympathetic system, it is quite conceivable that a centripetal irritation having been caused by disease in the periphery of the fifth, and having found its way to the cerebral centres, and thence to distant nerve territories, may be arrested by elimination of the original irritation.

Hack's doctrine could never have attained so much popularity as it did if there had not been something rational in these hypotheses. The great mistake, however, which his enthusiasm led him to make originally, and which I believe his adherents are still making, was that he generalised too quickly from a number of neurotic patients in whom this local treatment may have had a temporary effect, either in the manner of a suggestion or of a pure counter-irritation. He took this effect to be an assured and a lasting one, and thereby was induced to regard as well-ascertained facts results which later and calmer observation has shown to be of an exceedingly doubtful and frequently unstable character.

And the worst of the whole matter, as already stated, is that, so far as I can speak myself, we are not in a position to say beforehand in the great majority of cases whether a neurosis is due to reflex influences from the nose or not. This fact of course renders the position not only of the diagnostician, but of the therapist, extremely difficult; inasmuch as there are not, so far as I know, in spite of all the various directions that have been given, any really reliable indications from which one is enabled to give a trustworthy prognosis with regard to the effect of nasal treatment in these cases.

Asthma.

Take, for instance, 3 cases of genuine bronchial asthma, which are sent to a rhinologist because, after careful exclusion of all other causes (affections of the heart, kidney, lung, stomach, etc.), nothing seems left but to ascribe the troublesome disease to nasal obstruction, from which all 3 cases have suffered for many years. Let the pathological conditions observed be in all 3 cases exactly the same, namely, very considerable swelling of the anterior parts of the lower turbinated bones, interfering even under ordinary conditions with nasal respiration, and obviously aggravating the respiratory difficulties during the asthmatic attack. The similarity of the local conditions in the nose in all 3 cases may be such that if the patients' faces be covered, it would be impossible to distinguish them from one another. Yet, if they all be treated exactly alike, namely, by galvanic-caustic reduction of the swollen parts, absolutely different results may be obtained; in the one case a complete cure of the asthma, in the second case temporary disappearance, or at any rate improvement of all the troublesome symptoms; in the third no effect whatsoever. Yet, I repeat, the local conditions in all three were perfectly indistinguishable from one another. And the worst of it is that the proportion of the really successful cases in my experience is very small compared with those which are only temporarily benefited, and even much more so in proportion to the absolutely unsuccessful ones.

The correctness of this statement will probably not be admitted by ardent rhinologists. They will tell you that they obtain a much larger percentage of cures, and of long-lasting improvements. Whilst I am preparing this lecture, I read in an American journal a paper, whose author begins as follows: "The frequency of asthma as a result of a diseased nasal condition has so often been brought to my notice that I feel hopeful of effecting a cure in every (!) case of this distressing malady that consults me. Unfortunately, I am occasionally disappointed, but only in a small minority of my cases." Well, gentlemen, I can only say it must be a very lucky man who has penned these lines. Otherwise I am not able to understand his own and similar statements. If in an operation in which great technical skill and large experience are of the utmost importance, the results of individual operators vary greatly—that is intelligible enough. But if in a question, like the one under consideration, in which the technique is of the simplest, one man speaks like our American friend, and the other as I am unfortunately compelled to do, the only possible explanation seems that the former has had unheard-of luck in the nature and selection of his cases, whilst the latter has been phenomenally unlucky.

This brings me to the curious interpretation which Dr. Dundas Grant has recently given in his address on Traps and Pitfalls in Medicine of my inability to join the chorus of the apostles of the nasal cure of asthma. He says: "Asthma is another disease in the treatment of which general medicine owes much to the specialist, and every practitioner in diseases of the nose must have before his mind cases in which the treatment of the nasal cavity has resulted in long and

even permanent relief from the suffering depending upon this disease. Sir Felix Semon has indeed said that only a small percentage of the large number of cases of asthma which were at one time brought to him by physicians were traceable to nasal disease or relieved by nasal treatment. His experience, however, has been exceptional, for a reason not far to seek. At the time when attention was first drawn to the dependence of asthma in a certain number of cases, at least, upon nasal disease, Sir Felix Semon already had in so high a degree the confidence of physicians at large that cases of asthma were brought to him in large numbers, on the supposition that he was to find nasal disease in them all. He was naturally disappointed at the inevitable result in a considerable proportion of the cases. At the present time physicians make a rational search for nasal symptoms, and when such are present or suspected, then only are the patients brought before the notice of the rhinologist, and under such circumstances the percentage of beneficial results is by no means a contemptible one."

That is, indeed, a curious explanation. In the first place, what Dr. Grant states in it as to the manner in which my views have been formed are not facts, and he certainly cannot have derived his statements from my own writings, for I have never said anything that could possibly justify his purely theoretical description. Secondly, I feel sure that he wished to express his dissent from my views in the most courteous fashion, but I am afraid he has overlooked that the form chosen pays but a poor compliment both to my intellect and to my honesty, for he makes it appear as if I had, when the whole question was new, operated "by order" upon numerous cases without using my own judgment, and as if I had later on obstinately stuck to opinions arrived at through indiscriminately operating in the first instance. I can assure Dr. Grant that he is entirely mistaken in both respects. If he had read what I have written on the question since 1884, he would have found that from the first I have used my own discretion in selecting my cases for nasal treatment, and I need hardly say that if subsequent experience had corrected my first impressions, I should have considered it my plain duty to publicly correct erroneous views to which I had given currency in good faith.

However, these are personal matters which are of little interest to the public. What is of much greater importance is Dr. Grant's assertion that my experience was "exceptional." This really is an astounding statement. On May 5th, 1899, a discussion took place in the Laryngological Society of London on "Asthma in its Relation to Diseases of the Upper Air Passages." Of this discussion my friend, Mr. Ernest Waggett, has made a careful abstract in tabular form, which he has kindly permitted me to use. Seventeen speakers took part in this discussion and reported their personal experiences, which are summarised in his table (printed in the next column).

As a net result of this discussion, then, which was carried on, I repeat, by seventeen British physicians and specialists of long and extensive experience, we find that actual cures or considerable improvement were reported in nine—say nine—cases, in three of which adenoids, and in four of which polypi, were present, a truly magnificent proportion if one remembers how many hundreds of cases of asthma have been treated in this country alone by intranasal interference since 1884. And even so far as expressions of mere "opinions" are concerned, it will be seen from these tables that out of seventeen speakers only seven expressed themselves in anything like a hopeful strain, whilst the other ten held either very reserved or directly unfavourable opinions.

After this it is unintelligible to me how Dr. Dundas Grant can speak of my experience as "exceptional." I hold, not exceptional, but moderate views, which are shared, I am glad to say, by many of my fellow-specialists, and to these views I adhere. I always painfully feel when I see cases of this sort that by dissuading the patient from undergoing the treatment, if there be an actual morbid condition of the nose to which the asthma could be rationally ascribed, one might possibly deprive the patient of his only chance of getting rid of his troublesome disease. To counsel him, on the other hand, to undergo a treatment which, though not painful, certainly is anything but pleasant, and may be very tedious, whilst one is convinced that in a very small proportion of such cases only

real and lasting benefit is obtained, will be always very unsympathetic to a man whose turn of mind does not naturally enrol him amongst therapeutic enthusiasts.

Under these circumstances I always think it best in cases of that sort to speak, when one has to do with educated patients, as frankly as possible, and explain as far as one can the present state of the whole matter, without either urging or dissuading from intranasal treatment. This attitude, I think, does justice to both the patient and the practitioner.

It is devoutly to be hoped that more reliable indications may soon be laid down for our procedure in such cases. At the present time, whilst in some cases very pleasing and, in a few patients, altogether unexpected results are obtained, I regret to say that in my experience our knowledge with regard to diagnosis, and our results with regard to the treatment of nasal reflex neuroses are still extremely unsatisfactory.

Personal Experiences as to Asthma and Nasal Operations.

	Reports of Actual Cases.	Opinions Expressed.
Percy Kidd	2 polypi; "manifest relief"	"Frequency of association much exaggerated." "Improvement in most cases temporary and incomplete."
McBride	1 cure, adenoids	"Reasonable to expect benefit from removal of polypi." "Mentioned several cases" in which benefit occurred.
Thorowgood	1 case, adenoids, almost free	"Quite right not to promise the patient cure from asthma."
Waggett	1 case, spur and bridges	Since date of meeting asthma returned, though nose practically normal.
McIntyre	—	"Could recall a few cases of cure," but these were a very small minority.
Tilley	—	None except questionable case with adenoids.
Scanes	—	"A few patients ready to maintain" they were cured. Majority got great relief.
Spicer	—	Very large proportion of a more or less prolonged amelioration or cessation.
Watson	1 case of practical cure (general treatment given also)	—
Williams	—	—
Theodore Williams	1 case, polypi	—
Permewan	—	Majority "great relief" until necessity arose for further intranasal operation. Fair proportion completely cured.
D. Grant	1 cure, polypi	"Thought that unless some definite evidence could be obtained that the source of irritation was in the nose, any operation, except for relief of obstruction, was hardly justified."
C. Beale	1 case relieved for a time by repeated operation	In over 50 per cent., where nasal disease present, relief might be expected.
Hill	—	Lasting success in exceedingly small percentage. In his experience most frequently no results obtained at all.
Semon	—	Had met cases which had been "considerably damaged" by intranasal treatment.
StClair Thomson	—	—
Lack	1 case, adenoids	—
De H. Hall	1 case, polypi	Very fair proportion of considerable and permanent relief.

5. LOCAL SYMPTOMS AND SENSATIONS OF OBSCURE ORIGIN.

At the head of this division I would place the principle: not to try and at any price to find the explanation of every symptom and every sensation experienced in the upper air passages in trivial or even imaginary deviations from the normal existing in these parts.

But here again I wish to guard against misunderstandings. Undoubtedly, when a patient consults us, complaining about his nose and throat, our first duty will be carefully to examine these parts. If we find in them a rational explanation of the symptoms complained of so much the better. The case, then, will belong to the first category I discussed—to the affections of purely local character—and in that class, as I have tried to show, much may be expected from appropriate local treatment.

But the case is very different indeed if the actual changes met with are of so trivial a character as not to account for the symptoms present, or if they are of such a nature that to ordinary common sense a relationship of cause and effect is practically excluded. Take, for instance, a case of hoarseness due to

paralysis of the left vocal cord. It may as yet be impossible to make out the cause of the paralysis when the patient consults the doctor, but the latter would, in my humble opinion at least, act extremely unwisely if he were to accuse an accidentally concomitant elongated uvula as the cause of the hoarseness, and to remove that structure. Yet I have known cases in which this has actually been done, and in which the real cause of the hoarseness ultimately turned out to be aneurysm of the aorta!—Or, to take another example: A patient comes complaining of some difficulty in swallowing. The doctor diagnoses, as was the fashion a few years ago, "varicose veins" at the base of the tongue, or at the posterior wall of the pharynx, and destroys them by the galvano-cautery. The patient is not relieved and consults another doctor, who finds that the real cause of the dysphagia is commencing bulbar paralysis! This, again, is not a fantastic example; I have seen an instance of that kind myself.—Or, as in the case mentioned in the last division: A patient suffers from violent cough; the cause is declared to be a spur of the septum, which touches the opposite turbinal; operative treatment in the nose is resorted to without avail; the patient sees another medical man, who finds that pulmonary tuberculosis is the real cause of the cough.

Few things, gentlemen, will damage the reputation of a medical man so seriously as mistakes of this kind; few things will lend so much colour, as they do, to the accusation of narrow-mindedness which is so apt to be brought against specialists.

I have deliberately selected elongation of the uvula, varicose veins at the base of the tongue and at the back of the pharynx, and spurs of the septum as representative "scapegoats" for the explanation of all possible symptoms in nose and throat. In children, of course, adenoids may be added, and in adults granular pharyngitis, enlargement of the lingual tonsil, and hypertrophic rhinitis run them very close. But the three first named were until very recently, in my experience at any rate, but too commonly held responsible for all the ills to which nose and throat are heir to. Of these the oldest offender is undoubtedly "elongation of the uvula." Though matters, I think, are better now than they were twenty years ago with regard to this topic it is still apparently believed in some quarters that cutting the uvula is a sort of "panacea" for all possible forms of throat disease, whilst in others it is looked upon as a "last resort" after the failure of other measures. Now, the operation itself is, of course, a very small matter, but the after-pain is, as I can assure you from personal experience, sometimes very great indeed, and when a patient has suffered acutely for several days without obtaining any benefit with respect to his original symptoms, it is not exactly likely that his love for the operator will be increased thereby. In my opinion the operation is extremely rarely required, and should only be undertaken if it can be ascertained beyond doubt that elongation of the uvula is at the root of the symptoms complained of.—The second "scapegoat," namely, "varicose veins" at the base of the tongue and at the back of the pharynx, or "piles" in the throat, as they were elegantly called, at one time raged with the fury of a regular epidemic, and were held responsible not only for all conceivable throat symptoms, but can you believe it, gentlemen, for such affections as "spasmodic torticollis" and "paresis of an upper limb"? When, however, Dr. Herbert Tilley courageously pricked that bubble in 1896 it utterly collapsed and wonderfully little is nowadays heard, thank goodness, of "lingual varix." *Requiescat in tenebris!*—The third poor sinner, however, the spur on the septum, so far as my observations go, still flourishes, and though it may not even touch the opposite turbinal, is held responsible in some quarters for all possible nose, throat and ear symptoms. It is devoutly to be hoped that it may soon share the fate of the "varicose veins!"

But, gentlemen, seriously speaking, this whole movement, this "morbid readiness to discover disease," this desperate trying to find in every case and at any price a local explanation which, I am sorry to say, has been again in the ascendant during the last few years, after having been victoriously combated in the early Eighties, is, I firmly believe, unsound, retrogressive, and greatly to be deprecated. I certainly do not wish to make myself the advocate of such expedients, as to refer every local sensation in the upper air

passages to the question of "general health," or to rest satisfied with giving it a high-sounding name such as "paræsthesia" or "neuralgia." Such expedients are, I know well enough, but too often the "refuge of the destitute!" Personally I am much more pleased if I find well-marked granular pharyngitis, which can be cured by a few galvano-caustic applications, in explanation of dryness and soreness of the throat, than an apparently normal mucous membrane when such sensations are complained of. But there can be no doubt, on the other hand, that many local symptoms and sensations actually do depend upon the general health, upon diseases in remote parts, upon purely functional nervous diseases, and that to disregard these possibilities; not to look further than to the tip of the nose or to the lower end of the trachea; and to treat every tiny abnormality by chance existing in these parts as the real cause of the patient's symptoms, is as little calculated to do good to the patient as to reflect credit upon the medical attendant!

6. THE NECESSITY OF A PROPER PROPORTION BEING OBSERVED BETWEEN THE GRAVITY OF THE DISEASE AND THAT OF THE INTERFERENCE.

You all, remember, no doubt, that delightful song in the *Mikado*, gentlemen, in which that enlightened potentate thus states the summit of his ambition:

My object all sublime
I shall achieve in time
To make the punishment fit the crime,
The punishment fit the crime.

Would, gentlemen, that that sound principle, "To make the punishment fit the crime," were elevated to front rank in the considerations which ought to guide us when adopting local treatment in affections of the upper air passages! But, alas, this is by no means the universal rule! In previous divisions of these lectures I have had repeatedly to complain—as in the paragraphs dealing with adenoids, with laryngeal tuberculosis, with functional aphonia—that local treatment was by no means always efficiently carried out. In this—concluding—part it will, on the contrary, be my duty to warn against adopting measures the severity of which is quite out of proportion to the exigencies of the case. I shall give you three instances, which will show you that such a warning is much-needed. I will illustrate how excessive local treatment may err in various degrees from mere superfluity, through unnecessarily severe and dangerous procedures, and finally, through resorting to what I consider to be positively unpardonable measures.

Before, however, embarking upon this not very pleasant task, I feel I ought to say a few words concerning the new radical operation for nasal polypi introduced by Dr. Lambert Lack, lest my silence be misunderstood. Dr. Lack being convinced from his investigations that the primary element in the formation of nasal polypi is a rarefying osteitis of the ethmoid bone, proposes in all cases in which there is extensive bone disease with numerous polypi, in which frequent recurrences take place after operations, and in which there is suppuration from the ethmoidal cells or from the accessory sinuses, to remove radically the whole of the diseased bone under a general anæsthetic. Seeing the extreme obstinacy and tediousness of such cases, I fully agree that if it should turn out that the proceeding recommended is both safe and efficient, it would represent an enormous progress over our present methods. But it remains as yet to be seen whether these two demands, safety and efficiency, will be fulfilled by the radical method, and until we are in possession of larger experience concerning them I refrain from expressing an opinion. I already have knowledge and details of a case in which death from acute meningitis occurred some three to four days after the operation in a patient who had, except for nasal polypi, been in good health. As Dr. Lack himself warns us: The lamina cribrosa is not a part to take liberties with.

Coming now to affections in which I believe that but too often the severity of the interference is out of proportion to that of the disease, I select as an illustration of that class in which energetic and prolonged local treatment is, in my opinion, absolutely superfluous, the affection described as lepto-thrix-mycosis, or as keratosis of the tonsils, base of the tongue, and pharynx. Aside from the question whether the

leptothrix or the cornification of the epithelium prevails, in both instances white, rather hard, firmly-adherent projections are seen to protrude from the crypts of the palatal and lingual tonsils, and, more rarely, from follicles on the posterior wall of the pharynx and the palatal arches. As a rule they produce no symptoms whatever, and, in my experience, are usually detected by the patients themselves on a chance inspection of their throats. The patients are then apt to be much frightened by the strange appearance and consult a doctor for what they call an "ulcerated" throat. Occasionally they complain of various unpleasant sensations, which, however, I am loth to attribute to the tonsillar affection, as I have almost always found this mycosis or keratosis in people whose general health has been low for some reason or other, and who often enough complain of such sensations without any tonsillar complication being present at all. The harmlessness of the affection is only rivalled by its obstinacy to local treatment. Whatever method be used—and the name of the remedies and operative measures recommended in these cases really is legion—no sooner have the protuberances been removed than they reappear. Some time ago it was stated in a discussion that a case of this sort had been treated for three months with the galvano-cautery without success. Even when with great patience and endurance complete removal appears to have been effected, recurrence is extremely apt to take place.

Now what I wish to emphasise is that no local treatment whatever is required in these cases. Speaking from large experience I can confidently state that if the patients be assured that there is nothing serious the matter, and if they be ordered change of air, tonics, rest, open-air exercise, etc., they will get well without local treatment of any kind. Indeed, I believe that many of these cases are never seen by a doctor because the affection arises and disappears without causing any symptoms.

Whilst in the category just discussed local treatment in my opinion is simply superfluous, it may do a good deal of harm, both immediate and remote, if indiscriminately and excessively employed in the class of cases to which I now invite your attention, namely, in enlargement of the posterior ends of the lower turbinals, be this enlargement of a merely congestive or a truly hypertrophic character ("moriform hypertrophy"). Undoubtedly in a certain number of such cases the obstruction to breathing caused by the swelling of those bodies is so great, that it must be removed. Until recently this was technically no easy matter, as it is often extremely difficult to pass a snare over the posterior ends of the lower turbinals, however much enlarged they may be, and as other procedures such as the application of the galvano-cautery or submucous incisions are both tedious and uncertain in their effects. With the invention of Carmalt Jones's "spokeshave" all this was suddenly changed. A single forward draw of the ring knife, previously applied over the posterior ends of the lower turbinal, and out came the whole body! Nothing could be more simple, and nothing apparently for a time delighted the heart of the thorough-going rhinologist more, than to thus punish these rebellious structures. It was a common saying—malicious, I trust—not many years ago, that in a certain institution lower turbinals had to be swept up with a broom on operation days. But the proceeding, though simple, is not quite so harmless as was at first stated by enthusiastic apostles of the method. In not a few cases severe secondary hæmorrhage follows the operation. A leading London practitioner told me a little while ago that within a comparatively short time he had been called to no fewer than four of his patients, who, unknown to him, had undergone this operation, and had begun to bleed some hours or even days afterwards. In one case the hæmorrhage was so severe that he had to sit up the whole night with the patient. I have already narrated a similar case in a previous chapter. Another and very serious, because lasting, possible sequel to ablation of the whole turbinal is, that by removal of so large a surface of mucous membrane which has to accomplish, as already mentioned, the important functions of warming, moistening, and purifying the inspired air, a condition is produced very similar to atrophic rhinitis, with the result that very troublesome dry pharyngitis, with a tendency to formation of crusts and liability to laryngeal catarrh, follow. This is

not, I beg emphatically to say, a theoretical apprehension. I, as well as others, have actually seen examples of such a serious and irremediable a result after these operations. Fortunately, the initial enthusiasm has been quickly enough followed by a return to greater sobriety. I was delighted to see that at the recent meeting of the British Medical Association a firm stand was taken by many of the speakers in the discussion on the treatment of nasal obstruction against complete turbinectomy, which as Dr. Brown-Kelly truly remarked, "had not redounded to the credit of British rhinology," and I think that, with very few exceptions, there is now a general agreement that even in cases in which removal of the posterior ends of the turbinals is indicated, the operation ought to be limited to these posterior ends, and not include, except in the rarest of instances, the entire body. In this connection I wish particularly to warn you against the notion which found expression on that occasion, that it did not much matter whether one removed a "useless" turbinate in its entirety or not. What is a "useless" turbinate?—We should do well to remember, I think, our similar experiences in the case of goitre. The occurrence of myxœdema in cases in which goitrous thyroid glands had been removed as "useless," taught us that they could, after all, not have been quite so useless as had been supposed, and the occurrence of pharyngitis sicca in cases in which the entire lower turbinals have been removed under a similar belief should, I venture to believe, teach us a similar lesson.

But the worst exaggeration that has ever to my knowledge been perpetrated in connection with affections of the upper air passages was committed last year when Dr. John Mackenzie, of Baltimore, read before the American Laryngological Association a paper bearing the significant title, "A Plea for Early Naked-Eye Diagnosis, and Removal of the Entire Organ with the Neighbouring Area of possible Lymphatic Infection in Cancer of the Larynx." One hardly trusted one's eyes when reading that title, but on perusing the paper itself one sees that the author has, at any rate, the courage of his convictions. In all earnestness, he considers the naked-eye diagnosis a "comparatively speaking neglected method," emphatically rejects the removal of a piece for microscopic examination, and demands—however early the diagnosis may have been made, however limited the disease may be—not only "early total extirpation of the entire organ," but even of its "tributary lymphatics and glands, whether the latter are apparently diseased or not" as "the only possible safeguard against local recurrence or metastasis."

After these astounding performances one would like to give Dr. Mackenzie the benefit of the doubt and assume that, Rip-van-Winkle-like, he must have slept throughout the whole modern development of our knowledge of laryngeal cancer, particularly as he declares that "thyrotomy with curettement or removal of all apparent (visible) disease is not up-to-date surgery, is in direct defiance of the rules that should govern us in the treatment of cancer, and is a reversion to and a resurrection of a method of procedure that was discredited and abandoned over half a century ago" were it not that such a plea is unfortunately inadmissible. Dr. Mackenzie was not only over here in 1895, when a long and instructive discussion on the treatment of laryngeal cancer took place in the Laryngological Section of the London meeting of the British Medical Association, but he himself took a leading part in it. He not only learned the views of his British colleagues on the question he now treats so passionately, but he also heard of the results they had obtained by the method which he now endeavours to disqualify as "not up-to-date surgery." These results he deliberately ignores. That is unpardonable. Mr. Ernest Waggett, in "the interests of American surgeons, and still more of American patients," has taken upon himself the very meritorious task of correcting in the same journal in which Dr. Mackenzie's paper was published his misleading statements, and of showing by facts and numbers the value of the method against which that author inveighs. Personally, however, I find it very difficult to take Dr. Mackenzie seriously, and I must confess that when I read his advice to condemn to a very serious and mutilating operation patients whom we have learned lastingly to cure by infinitely milder methods, I was irresistibly reminded of a certain Dr. Eisen-

bart, who is supposed to have flourished at the time of Frederick the Great, and who, in a well-known German students' ditty, gives a frightful account of his heroic exploits, of which the following—in very free translation, I am afraid—may give you an idea:

At Potsdam I trepanned, just hear,
Great Fred'rick's cook, to him so dear.
I poleaxed his devoted head:
No wonder that the cook is dead.

I certainly prefer the Mikado's principle, and I hope that Dr. Eisenbart is not likely to find many emulators amongst contemporary surgeons!—

With the expression of this hope, gentlemen, I conclude my lectures. Nobody can be more conscious than I am that I have brought forward nothing new, and that I have repeated in almost identical words much that I have said on previous occasions. But I honestly believe that such repetitions sometimes are required and may do good. Cato may have been, and probably was, a terrible bore with his eternal *Ceterum censeo*, but after all he thereby advanced his cause and ultimately obtained his purpose.

If I could venture to hope that by my warnings against excessive zeal and over-operating on the one hand, by my insisting on effectively operating on the other, I had advanced the good cause I have at heart, I should be perfectly willing to enrol myself on Cato's side.

ON SOME SYMPTOMS PRODUCED BY TUMOURS OF THE OPTIC THALAMUS WITH A CASE.

By J. MICHELL CLARKE, M.A., M.D., CANTAB.,
F.R.C.P.LOND.,

Professor of Pathology, University College, Bristol, and Physician to the
Bristol General Hospital.

In some cases of tumour of the optic thalamus a group of symptoms occurs which is of value in diagnosis. These symptoms were present in the case now reported and in one published in the *BRITISH MEDICAL JOURNAL* in 1891. In both cases, occurring fairly early and lasting for some time, there were (1) a sensation of heat or burning in the opposite upper extremity, (2) a marked intentional tremor in the same limb, absent during rest, and exactly resembling during movement the tremor of disseminate sclerosis, (3) hemiplegia of the opposite side of gradual onset, affecting the upper extremity only for a considerable time and predominating in this limb throughout. These symptoms must, of course, be taken in conjunction with the others present in making the diagnosis. The predominating paralysis of the opposite upper extremity is mentioned in 8 and movements of this limb in 6 out of 10 reported cases in which the lesion was fairly confined to the thalamus.¹

Instead of an intentional tremor there may be movements of a choreiform type or like those of post-hemiplegic chorea. In the subsequent progress of the case the paresis extends to the leg of the same side, and later this limb may also be affected with tremor, later still the paralysis develops into definite hemiplegia with the limbs in the ordinary hemiplegic position; spasmodic rigidity is generally marked, and as this becomes pronounced it abolishes the tremor of the earlier stages. Hemianæsthesia may also be present but is by no means constant or absolute in degree.

With regard to the intention-tremor, this is also met with in tumours in two other situations in the brain, namely, in the cerebellum, and in the corpora quadrigemina. In tumours of the cerebellum the tremor does not seem to be so frequent as the results of experiment would lead one to expect; in this case, also, it especially affects the upper limb.² In any case, therefore, in which this symptom is present the differential diagnosis between a tumour of the optic thalamus, corpora quadrigemina, or cerebellum has to be made; but in most cases this could be done from the accompanying symptoms, as the signs—which I need not go into here—of a tumour in each of these situations are sufficiently distinctive.

In addition to the symptoms given above, another, said to be characteristic of lesions of the thalamus, but apparently not invariably present, is a loss of the emotional movements of the face, whilst the voluntary are preserved. In the

present case the want of expression in the features was very marked. Early loss of control over the sphincters does not seem to be, as has been stated, a frequent symptom in tumours of the thalamus. When the growth extends backwards the nuclei of the third nerve will be involved. Mental dulness or slowness, present in the later stages, or even early in the illness, is probably connected with the great distension of the lateral ventricles which occurs.

In the case now reported it is remarkable that the three cardinal symptoms of intracranial tumour—severe headache, vomiting, and optic neuritis—were absent from first to last.

In the early stages the absence of these cardinal symptoms, with the patient's age, and the marked intentional tremor, made the case resemble an irregular one of disseminated sclerosis, and at first this was considered to be the most probable diagnosis.

The notes of the case are as follows:

The patient, a painter, aged 19, was first seen on October 25th, 1899. He had had no previous illness, and there was no sign of plumbism.

History.

The present illness began with diplopia twelve months previously, followed by deviation outwards of left eye eight months later, burning pain in left arm and hand a month afterwards, and impairment of fine movements of left hand and fingers; for example, in picking up a pin, but not of coarse movements—for example, lifting a heavy weight.

Condition on Admission.

He was well-nourished, intelligent. There was a marked absence of facial expression. The abdominal and thoracic viscera, and the urine were healthy. No headache, no vomiting, no giddiness; no affection of special senses, nor of organic reflexes. Speech slow and deliberate, but distinct. Gait normal; walked well with eyes open or shut.

Eyes.—There was right ptosis and right external strabismus; movement of both eyes upwards very defective, and the left eyeball hardly moved at all downwards. There was slight horizontal nystagmus when the eyes moved into either canthus. The right pupil was somewhat larger than the left; both reacted sluggishly to light and to accommodation, and the consensual reaction was absent. The optic discs and fundi were healthy. There was slight loss of sensation to touch but not to pain (pin-prick) over left side of head, neck, trunk, left upper extremity, and left leg. Muscular power good, but muscular sense in left hand impaired. He could not distinguish between different weights, which were easily recognised by the right hand. Dynamometer right hand, 56 kilos; left hand, 45. Knee-jerks equal and normal; no ankle clonus; superficial reflexes normal.

After-History.

Shortly after this date the left arm began to show marked intention tremor and lack of co-ordination on movement, which steadily increased. Condition in July, 1900.—No headache or vomiting, cramping pains in left arm.

Eyes.—Fine horizontal nystagmus. Pupils dilated, equal, react badly to light and accommodation. Paralysis of right third nerve; partial paralysis of left third. No optic neuritis; outer half of each disc pale; moderate concentric contraction of visual fields.

Sensation.—Partial left hemianæsthesia.

Motion.—Left hemiplegia: the arm being most affected; marked intention-tremor, entirely ceasing during rest, of this limb; some ataxy of the left leg in walking.

Reflexes.—Left knee-jerk increased: left plantar gave extension of toes; other reflexes normal. Intelligence good; speech slow, words slurred, and often indistinct.

October, 1900.—In addition to above, paralysis of both third nerves and (?) of both fourth nerves. Both knee-jerks exaggerated; left ankle-clonus; drowsiness and giddiness.

January, 1901.—Very drowsy, but intelligent, though slow in answering; speech slow, slurred; occasional incontinence of urine. Left anæsthesia complete; left arm and leg completely paralysed, contracted and rigid, with movements in arm like athetosis. Some numbness and slight tremor in right arm; double ankle clonus. From this time he was helpless, constantly asleep, with incontinence of urine and faeces, albumin appeared in the urine and there was knee and ankle clonus in both legs; the other symptoms remained as above. He died on March 4th.

Necropsy.

On removing the brain the only sign of disease externally was a swelling of the right crus. Vertical sections of the brain were made from before backwards and hardened in formalin. A tumour was found occupying the right optic thalamus, and extending downwards and backwards into the subthalamic region where it invaded the opposite side and pressed on the right internal capsule and crus cerebri, especially the right crus. It did not extend into the pons. The anterior end of the tumour was at about the level of the middle commissure in the mesial nucleus of the optic thalamus; passing backwards it occupied nearly the whole of the thalamus except its outer layer, and its posterior end (pulvinar) which were not involved. The third ventricle (posterior end) was pushed over to the left. The growth then passed downwards, involving the subthalamic region, red nucleus, and pressing on internal capsule on right side, and a little further back extended also into the left subthalamic region, invaded and partly destroyed the crus on the right side, and pressed upon it on the left: the nucleus ruber on the left and partly on the right side, and the grey matter of origin of the third nerves were replaced by the growth, which also compressed the aqueduct of Sylvius. The corpora quadrigemina were flattened and displaced upwards by the tumour. The tumour was well defined, and marked off from the surrounding brain structures by a definite margin; it was firm in consistence, and measured in its largest part, which was situate just behind posterior