ASSOCIATION MEETINGS.

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

Held March 25, 1892.

The President, Mr. LENNOX BROWNE, *in the Chair.*

THE minutes of the previous meeting having been read, the PRESIDENT said—

Gentlemen,—Since we last met the Association has lost its most distinguished member, one whom we chose as our first President, and to whom an everlasting debt of gratitude is due, not only from the Fellows of this Society working in the same special field, but from the whole medical profession and—through the increased power to give relief which the researches and lessons of this great man afforded them—from the world at large. Our colleague, Dr. Norris Wolfenden, has in the March number of the JOURNAL OF LARYNGOLOGY written such a complete and such a sympathetic memoir of our deceased Fellow, Sir Morell Mackenzie, that it is unnecessary, with the full programme we have before us, to attempt any elaborate extension of his just eulogy, but I may be permitted to say, without being accused of hyperbole, that had it not been for the genius and energy of Morell Mackenzie our department of medicine would never have taken the prominent position which is unanimously accorded it in the present day by all fellow workers in other countries; and only the few who like myself can remember the virulence with which he was attacked some thirty years ago when he established the first special hospital for throat diseases can understand how a nature, singularly lovable in all other relations of life, became embittered and combative towards so many of his own calling. Much of this feeling was, I am convinced, due to the knowledge that many even of his own colleagues in his public work were intensely jealous of his early recognized abilities and of his phenomenal success in practice. It reads, indeed, rather curiously, in the light of recent events, to find the names of these men, occupying the very highest seats in the councils of the colleges, gladly but humbly appended to microscopical reports of morbid growths removed by Mackenzie.

My acquaintance with Mackenzie dates from a period prior to my qualifying, and when I returned to this country from voyaging round the world he was the first to call on me. Well do I remember the little dispensary in King Street, and the inaugurative days of Golden Square. In 1865 I began to learn the laryngoscope by making drawings for Mackenzie, who, himself no mean artist—for he himself illustrated his Jacksonian prize essay—was at once the severest and the most appreciative critic I ever met with. From 1866 to 1873 inclusive, I was in daily

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converse and association with him, and, as I hope I have never been backward in acknowledging, I owe much of whatever success I have attained not only to his teaching and enthusiasm, but to the example of his unflagging energy—greatest always whenever, as was not infrequent, he was suffering physically—to his marvellous capacity for organization and for taking pains in even the minutest details. It is another remarkable trait in Mackenzie's character, which was full of paradoxical contrasts, that though occasionally accused of a too cursory treatment of his private clients, he would devote hours to an interesting hospital case, and that none of his written words were allowed to go to press until polished and finished to an extent that appeared almost fastidious.

Gentlemen, Mackenzie has his reward ; the world appears surprised that one known so universally for the last thirty years as a successful practitioner and author should have died so young, but of him indeed it may be said his works live after him, for nothing he wrote can ever be devoid of solid value, and, as I ventured to predict when congratulating him twelve years ago on the appearance of the first volume of his great work, it will be impossible for any author on any subject connected with laryngology to avoid quoting the name of Morell Mackenzie as an authority.

Let me, in conclusion, express a hope that the jealousies and the bickerings connected with this great teacher will now subside, and that many of our craft whom we highly respect and esteem and whom we would gladly have with us, but who have from various motives withheld or withdrawn from this Association, will now join us, if only as an acknowledgment of the indebtness they, in common with us, must feel to Morell Mackenzie as one of the brightest lights in that science which it is the purpose of our body to advance.

Dr. GEORGE STOKER, the Secretary, then read the following correspondence, and the President's suggestion that these letters be entered upon the minutes was unanimously approved of :—

"Feb. 4, 1892.

"The Council of the British Laryngological and Rhinological Association meeting to-day, make it their first business, on the proposition of Mr. LENNOX BROWNE, President, seconded by Mr. MAYO COLLIER, unanimously to offer a vote of condolence and sympathy to LADY MACKENZIE and her family on the death of SIR MORELL MACKENZIE, the first President of this Association, and to record their deep sense of the loss which that branch of science represented by this Association has thereby sustained.

"Presented on behalf of the Committee, which immediately afterwards adjourned, by

"GEORGE STOKER, Hon. Secretary."

"19, Harley Street, Cavendish Square.

"LADY MORELL MACKENZIE and her family desire to return their grateful thanks to the Council and Fellows of the British Laryngological Society for the kind and sympathetic vote of condolence sent by the

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Society on the occasion of the death of SIR MORELL MACKENZIE. The kind expressions of esteem and regard for Sir Morell and the recognition of his labours are greatly valued by Lady Morell Mackenzie and her family."

The following gentlemen were unanimously elected Fellows of the Association :—

G. A. DAVIES, Esq., M.R.C.S., Newport, Monmouth.

NIEL GRIFFITHS, Esq., M.R.C.S., Cheltenham.

GEORGE HOLLOWAY, Esq., B.A., M.D. Cantab., 5, Bentinck Street London.

L. HEMMINGTON PEGLER, Esq., 7, Radnor Place, London.

The PRESIDENT showed a patient suffering from *Hypertrophic Rhinitis with old history of Lupus.*

Case I. : The notes of this interesting case were as follows :—

M. M., aged forty-six, female, presented herself at the Central Throat and Ear Hospital on January 11th of this year, complaining of "pain in her throat" of two months' duration. She had suffered with nasal stuffiness for eight or nine years, and had been under treatment for polypus of the nose, for lupus of the nose, and for inflamed ankle joint, the nature of which was obscure. She was also the subject of frequent "gatherings" on her fingers, general debility, and "colds in the nose." Had been delivered of one child, which was born at the eighth month and lived four weeks only.

State on admission : Has a very unpleasant smell from her nose, a persistent tickling in her throat, especially when in bed, and her mouth is always dry in the morning. She cannot appreciate the smell of strong coffee, tea, or cooked meats.

Both nostrils were found to be obstructed, the left more than the right. In the *right* is seen an irregular, bright pink, spongy granulation mass, apparently springing from an hypertrophied septum. The middle turbinal cannot be seen, but the inferior is observed to be swollen and pale in contrast. The *left* nostril is chiefly occupied by similar granulation masses, growing from the middle turbinal. They are paler than those on the septum in the right nostril, and readily bleed on probing. The inferior turbinal on this side is also hypertrophied, and still paler than the new tissue. There is well-marked pharyngitis lateralis.

Has not lost weight and is not troubled with night sweats. The lungs are normal, with the exception of some harsh breathing over both apices. The expectoration is rather free, but contains no bacilli of tubercle and no elastic tissue.

A portion of the growth from the middle turbinal was removed, and on examination Mr. Wingrave found as follows :—

"The greater part of the structure removed consists of small cell-
"inflammatory tissue, covered with plain columnar and columnar ciliated
"epithelium. Mucoid degeneration is well marked in some places,

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" whilst in others masses of cell-clusters are seen, resembling, and possibly " identical with, 'giant cells.' Blood-vessels are plentiful, and their " walls show marked fibrosis, whilst here and there epithelioid pro- " liferation has blocked the lumen. Very little erectile tissue can be made " out, as it is invaded by the small cells. Cyst-like invaginations of " columnar epithelium are shown in several of the sections, whilst normal " mucous acini are fairly numerous. Lastly, the bone and periosteum " are found to be perfectly healthy, excepting that here and there the " small cell tissue appears to be invading the cancellous spaces. *There* " *is no necrosis.*"

Mr. Lennox Browne remarked that this case was one of great interest from several points of view :—(1) Mr. Wingrave's report, in which he suggested that the nature of removed tissue was that of a low type of tuberculosis—lupus, in fact—was made in ignorance of the clinical history. (2) The powers of repair in this patient were unusually good in one suffering from lupus. She had made an excellent recovery from the external ulceration, and promised to do as well under treatment of the intra-nasal disease. (3) The treatment adopted had been that of curetting and free rubbing in of a sixty per cent. solution of lactic acid, the parts having been previously cocainized.

The President also read notes of a second case of ***Lupus of the Nose, Pharynx, and Larynx.***

Case II. : E. W., female, aged eighteen, was admitted into the Central Throat and Ear Hospital, February 8th, 1892, complaining of deafness and sore throat and nose. Her history was that, three years ago, a patch of ulceration commenced on the left side of her nose, which became very swollen and red, but gradually returned to its normal size. The ulcerative process, however, continued to extend, reaching her lip six months ago. There is no family history of lupus or tubercle, but the patient is ill-nourished and ill-developed. The father suffers with some 'throat disease.' She has been deaf since infancy, and has lost flesh lately.

On examination, the tongue was seen to be covered with large, red tuberculated excrescences, which extended upwards, involving the faucial pillars and the soft and hard palate. The uvula had disappeared, and cicatrization shows that the disease had attacked the pharynx.

In the larynx some small tubercular nodules were seen in the inter-arytenoid space. Both arytenoid eminences were infiltrated, as also both ventricular bands, but the vocal cords were free. The epiglottis was nodulated and pale.

In the nose the disease was confined to the skin, which was involved for some distance from the edge of both alæ.

Her expectoration was very scanty, and did not contain any bacilli, nor any lung tissue.

There was marked dulness at the base of right lung, with numerous moist sounds.

These conditions were practically unchanged on March 12th, when she developed erysipelas. This was by no means her first attack, and as the previous ones have been attended by improvement in her lupus, it is to be hoped that the same happy result may again eventuate.

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Dr. W. MILLIGAN.—*Primary Nasal Syphilis. Second Attack of Syphilis.*

Mr. President and Gentlemen,—The comparative rarity of second attacks of syphilis makes the record of the following case of interest.

The patient, a married man, aged thirty-two, first noticed a certain amount of pain and discomfort in the right nostril four weeks after exposure to a possible source of syphilitic infection.

Previous history: Towards the latter part of 1884 the patient consulted a London surgeon on account of a painful sore situated at the margin of the nail of the right index finger.

The sore was first treated merely as a poisoned wound. During the period of treatment, however, a roseolar rash appeared upon the back and chest. The cubital and axillary glands became enlarged. The sore was accordingly looked upon as being of syphilitic origin, and treatment by means of mercury was immediately resorted to. In six months' time patient was dismissed as cured. During this period, however, the patient's wife became syphilised, and accordingly underwent a mercurial course of treatment during the greater part of 1885.

The first child was born in July, 1886, the second in January, 1888, and the third in February, 1890. These children appear to enjoy good health. In 1887 the patient's right pupil was noticed to have become markedly smaller than his left, and has remained so ever since. Early in 1889 patient felt much run down in health, and consequently underwent another course of treatment. From that time up to the date of the present affection he had enjoyed comparatively good health. In June, 1891, four weeks after exposure, the right nostril became irritable. On examination the tip of the nose was found inflamed, and painful to the touch. Within the margin of the right ala nasi, upon its septal aspect, an oval indurated sore about the size of a small bean was found. The sore had all the appearances of a true Hunterian chancre. No enlarged glands were detected.

The sore was destroyed by means of the galvano-cautery, and the raw surface dressed with iodol. A nasal douche was prescribed, and mercury in the form of hydrarg. c. cretâ pills (gr. i.) was ordered three times a day. Seven weeks after inoculation a fairly copious roseolar rash appeared upon the chest, and a few isolated papules between the shoulder blades. These, however, rapidly disappeared. The nasal chamber was kept constantly irrigated with antiseptic washes, and the sore dressed, at times with iodol powder, at times with ungt. iodoformi. In three weeks the raw surface left from the application of the cautery had healed. The mercury pills were continued, and small doses of iodide of potassium given in addition. At the present time the general condition appears satisfactory, and there has been no further trouble in the nose.

In this case we have, then, an example of a second attack of syphilis seven years after the first.

Mr. Jonathan Hutchinson, in his classical work upon syphilis, admits the possibility of second attacks, and cites several illustrative cases. He quotes from Diday, who says, "That second attacks of syphilis, although "not very rare, are yet exceptional to rule; that when they occur they

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" prove that the patient presenting them had been cured of his previous " attack so far as it was a blood disease, though, perhaps, not necessarily " in respect to tertiary symptoms. Also that the character of the second " attack will be influenced by the length of the period which has elapsed " since the first, and perhaps also by its severity." In the case before us, no doubt the severity of the attack was considerably modified by the effects of the previous condition. It is interesting to note that in the first attack the sore was upon the right index finger, in the second within the margin of the right ala nasi.

Dr. WARD COUSINS mentioned that he had seen a woman with well-marked primary syphilis of the lip with eruption. He had not had any experience of second attacks of syphilis.

Dr. STOKER denied that the fact that the patient developed the sore on the second occasion proved that he was cured of the first attack He pointed out that the patient, in this case, had contracted syphilis seven years before, and four weeks before the chancre developed in the nose he had exposed himself a second time to infection. That fact did not necessarily militate in favour of his having altogether recovered from his first attack.

Dr. DONALD STEWART observed that the case was very interesting and unusual. It occurred to him that possibly there might have been a flaw in the diagnosis. The patient was said to have had syphilis, and his wife had syphilis not in a very unusual place. The children, however, were healthy. With reference to the occurrence of tertiary symptoms, these were probably due to some local weakness of the tissues that caused a development somewhat akin to what they saw in tumours. That was not said to be a blood disease.

Dr. STOKER said he merely wished to protest against its being accepted as a dogma, that the subsequent contraction of syphilis was to be accepted as proof that a previous attack had been cured.

Dr. WARD COUSINS said he thought it was generally understood that so long as syphilis remained a blood disease it was communicable, but the moment it became a question of tissue lesions only, then it was no longer capable of being conveyed. He had had striking examples of the truth of this. Of two brothers, both in the Royal Navy and both syphilitic, one was scarred all over, and had suffered from syphilitic epilepsy. He married a young wife and had a healthy lot of children. The other, still subject to secondary manifestations, married, and his wife miscarried several times.

Dr. MILLIGAN, in reply, said that personally he did not doubt that the patient had had syphilis previously, having become inoculated on the index finger. Moreover, the wife was taken to the same surgeon who had attended to the husband, and he had treated her accordingly. He thought that the evidence was conclusive. So far as he was aware the children were healthy, and there had been no miscarriages. The patient had been free from all symptoms for several years, and had apparently absolutely got rid of the effects of the original attack. In quoting from Mr Hutchinson's remarks, he understood him to mean that a man might be cured of the blood disease, but was still susceptible to local tissue changes.

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Dr. W. MILLIGAN.—*Idiopathic Abscess of the Larynx.*

Mr. President and Gentlemen,—The rarity of cases of idiopathic abscess of the larynx seems to me to be sufficient reason for bringing the details of the following case under your notice.

The patient, a man aged twenty-three, was a wood turner by trade.

Family history: Father died at the age of fifty from heart disease. Mother alive and healthy, aged fifty-six. Has one brother and two sisters alive, all healthy. One sister died in infancy.

Previous history: Patient has never been robust, but has never had any severe illness. No history of syphilis.

Present condition: The first symptom noticed was a slight swelling over the region of the right ala of the thyroid cartilage. Shortly afterwards a certain discomfort on swallowing. There was no dyspnœa and no aphonia. The swelling having gradually increased, the patient consulted a doctor, who told him that he was suffering from a tumour in the neck, and recommended the daily application of iodine liniment. Three weeks after the onset of the trouble the patient came to the Manchester Hospital for Diseases of the Throat for advice. On examination, a swelling, the size of a pigeon's egg, was found lying over the right thyroid ala. The swelling was painful on pressure, and on palpation gave the idea of deep-seated fluid being present. The skin had been much irritated by the frequent application of iodine. There was slight dysphagia, but no aphonia or dyspnœa. Tongue was furred, bowels constipated, and temperature slightly above normal. On laryngoscopic examination an ovoid swelling was seen upon the laryngeal surface of the epiglottis upon its right side. The mucous membrane covering it was slightly congested. Elsewhere the laryngeal mucous membrane appeared normal. On palpation with the laryngeal sound the swelling was found to be slightly elastic. At a point directed towards the middle line of the larynx the mucous membrane presented a slightly yellowish tinge. The right cord was nearly concealed by the swelling, the left cord appeared normal. On pressure being applied to the swelling on the outside of the neck, no change in the size of the laryngeal swelling (which was kept under close observation while this was being done) could be detected.

It was considered that the patient was suffering from a slowly-increasing abscess of the larynx, the tendency of which was to point externally. Sedative inhalations were ordered and poultices to be applied externally. The pain and swelling, however, went on increasing, and as there was no longer any doubt as to the presence of matter, a free incision was made, and a quantity of pus and broken-down *débris* evacuated. A drainage tube was put in and the parts dressed. No change having taken place in the appearance of the laryngeal swelling, it was decided to incise it freely. An incision was accordingly made with a laryngeal lancet across the yellowish area already spoken of, with the result that a small quantity of pus was expectorated. The swelling rapidly subsided, and at the end of a fortnight no trace of the original condition could be seen.

The case appears to be of interest—

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(1) From the very insidious course the disease ran, in this respect resembling the cases recorded by Thin, De la Sota, Ganghofner, Marcèt, and Hillman, and referred to in an article upon Abscess of the Larynx by Richards, published in "The International Journal of the Medical Sciences," May, 1890.

(2) From the absence of any marked laryngeal symptoms.

(3) From the tendency of the disease to point outwards (although the path of communication must have been a very small one).

The symptoms are, as a rule, severe ; at other times the disease may run a mild and uneventful course, and terminate by spontaneous rupture.

The commonest causes of the trouble appear to be infectious diseases, scarlet fever, measles, etc., and frequent colds. Males appear to be much more frequently affected than females. Of the twenty-six cases observed by Richards, sixteen were males and nine were females. In one case the sex is not mentioned. The decade between twenty and thirty affords the largest number of cases.

With regard to the second point, at no time was there any indication that the laryngeal mucous membrane was the seat of disease. There was no dyspnœa and no aphonia. The situation of the abscess in any particular case must naturally determine the special symptoms. In a series of thirteen cases recorded by the late Sir M. Mackenzie the abscess occurred at the root of the epiglottis six times, in one of the ventricular bands four times, and in one of the ary-epiglottic folds three times. In the series of cases recorded by Richards the base of the epiglottis was involved six times, the arytenoid eminence twice, the ary-epiglottic folds three times, the ventricular band once, the vocal cords three times, the sub-glottic portion of the larynx six times, the internal surface of the thyroid cartilages twice, and the pyriform sinus twice.

Occasionally the abscess may be somewhat diffuse and involve several of the component parts of the laryngeal mucous membrane.

Although no communication could be made out between the laryngeal abscess and the abscess in the peri-thyroid tissues, there is little doubt but that some path existed between these two foci. As a rule the abscess points internally, but at times externally, as in the present case and in a similar case recorded by Rühle.

In respect to treatment, early incision should be resorted to, otherwise there is a risk of the abscess causing suffocation. If the abscess be very large it may be necessary to perform tracheotomy before attempting to open it.

Dr. WARD COUSINS.—*A Case of Deep Abscess of the Neck followed by Acute Laryngeal Symptoms.* Tracheotomy. Recovery.

A child, one year and ten months of age, was admitted under my care into the Royal Portsmouth Hospital in January, 1891, suffering from acute laryngeal symptoms. The mother stated that she had been ill three weeks, and that the difficulty of breathing had gradually increased from the onset. The little patient appeared greatly distressed, and the breathing was rapid and attended with a loud crowing noise. No tender spot or

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swelling of the neck could be detected. The throat was clean, the voice clear, and the resonance of the chest normal. The temperature during the day was not much elevated, but at night it reached 101° or 102°. She constantly sat up in bed with her head inclined a little forwards. In forty-eight hours after admission the symptoms dangerously increased, and there was marked recession of the thoracic walls during inspiration, so that tracheotomy was performed without delay. A free incision was made at the lower part of the neck and the structures divided in the direction of the trachea. Very severe hæmorrhage occurred and several vessels were clamped with pressure forceps. When dividing the deep structures over the tube the wound was suddenly filled with thick pus, and about four ounces rapidly escaped. The incision was most carefully cleansed and the hæmorrhage arrested, and as the breathing was still unrelieved the trachea was opened and a tube inserted. After a few hours the little patient rallied and the respiration became tranquil. Free suppuration continued for two weeks and escaped around the tube. It then slowly subsided, and at the end of six weeks the child was convalescent and the wound healed.

Remarks. Before the operation the little patient was carefully watched, and the neck scrutinized over and over again and compared with the necks of other children of the same age, but no change could be detected. An effort was made both with the stethoscope and the hand to determine the seat of the disorder, but it is my experience that physical examination of this kind is seldom reliable, and in young children it is especially uncertain if the noisy respiration can be heard more loudly, or the thrilling felt more distinctly, at the place of constriction than at any other part of the respiratory tube. The entire absence of hoarseness, however, certainly indicated that the obstruction did not arise from laryngeal inflammation. The disease was not an ordinary abscess of the connective tissue of the pharynx, or a deep suppuration connected with spinal caries, for the act of deglutition was not involved, the glands below the jaw were not enlarged, and there was no swelling of the throat or fauces; moreover, all the movements of the head were performed with ease, and the neck was free from tenderness. Fortunately, the latent cause of the disorder was accidentally reached during the operation. The incision was commenced lower down than usual in the neck, as the symptoms were considered to be associated with a disturbance quite external to the larynx and pharynx. It is my opinion that this deep purulent accumulation had a glandular origin within the chest, and that the trachea had been slowly compressed during its formation.

Dr. ELLIS, in reference to the possible cause in Mr. Milligan's case, remarked that though the statements of patients were not to be relied upon implicitly they were sometimes right. He mentioned the case of a patient who had applied at the Newcastle-on-Tyne Throat and Ear Hospital, and persistently declared that what he (Dr. Ellis) took to be a hyperæsthetic condition of the throat was due to her having partly swallowed a fish bone. He was unable to detect any trace of the bone, but she continued to tease him about it. At last as the tonsil began to swell it was removed, and his colleague, Dr. Stainthorpe, having cut it

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open, found the long-lost fish bone firmly embedded in its substance. It was evidently the bone of a plaice, and nearly an inch long.

Dr. DUNDAS GRANT, in reference to Dr. Milligan's case, observed that it was interesting in that the source of abscesses of the front of the neck could often only be made out by careful laryngoscopic examination. He referred to a case of his own in which there was a swelling at the side of the larynx, the exact connection of which with the larynx was rather difficult to make out. It was obviously of an inflammatory character. On laryngoscopical examination he found one of the arytenoid cartilages was considerably hampered in its movements, and there was a good deal of swelling about the crico-arytenoid joint resembling primary perichondritis. He applied cold by means of Leiter's coil, and prescribed rest and quiet. In a few days the pain and discomfort disappeared, and in about a week the mobility of the arytenoid cartilage had to a great extent returned. If one had not examined this case laryngoscopically one would not have thought it of sufficient importance to enjoin complete rest, and to prevent all exposure, and particularly to order rest for the larynx, so ar as the use of the voice was concerned. Dr. Ward Cousins' case was one which raised a number of speculations. He commended his courage in not risking a definite opinion as to where the pus came from. He had himself seen cases, *post-mortem*, where the source had been discovered in the most unexpected places. In one such case it had extended from the ear. He asked whether the stridor was distinctly laryngeal or whether it was of the croaking character, such as would be likely to be caused by pressure on the trachea ; also whether there were violent excursions of the larynx. He pointed out that when the seat of the obstruction was in the larynx then the latter was usually pushed up and down with respiration. When, on the other hand, it was lower down the larynx remained stationary. Personally, he had been unable to make out whether this rule was absolute, and he asked whether the case threw any light upon the question. He admitted the possibility of the pus coming, as suggested, from the chest, pushing its way beneath the layer of cervical fascia which was attached to the cricoid cartilage, which would be cut through in performing tracheotomy in the situation described.

Dr. PEGLER asked if there were no redness, swelling, or any signs whatever, indicating the presence of an abscess? He said the case recalled to his mind one of deep abscess of the neck of considerable interest which he had seen in the country a short time ago in consultation with Dr. Handford, of Nottingham. After suffering a week from simple acute pharyngitis, the patient, a male, aged twenty-five, complained of pain and tenderness to the right of the middle line about the level of the thyroid sthmus, there being also redness and slight glandular enlargement there. He was confined to bed, and swallowing became extremely difficult and painful, till only a very small quantity of liquid could be taken slowly. There seemed good reason to fear involvement of the trachea, and a necessity for having to perform tracheotomy at any time. Examination by the laryngoscope and for retro-pharyngeal abscess gave negative results. Two or three days before the termination of the acute symptoms the sufferings of the patient were considerably aggravated by the constant

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necessity for hawking phlegm and mucus, with fear of being choked, till one night, a fortnight from the commencement of the illness, a quantity of pus was suddenly ejected by the mouth. It was evident that an abscess had discharged into the œsophagus. Complete relief resulted, and the patient made a good recovery.

Mr. MILLIGAN, in reply, admitted that he sometimes ignored patients' statements, as they were frequently so unreliable. With reference to the necessity for a laryngoscopic examination, he said he did not think he would have thought of examining the throat had the patient not applied at a throat hospital. He agreed, however, that it ought to be a routine practice in every case of obscure swelling in the neck to examine with the laryngoscope.

Dr. COUSINS, in reply, repeated that there was an entire absence of any bogginess or swelling in spite of the most careful scrutiny for any such indication in the shape of an enlarged gland, a tender spot, redness, or anything of the kind. It was that very absence that made him feel that he had to do with something very unusual, indeed he feared that the pressure might be too low for him to reach by tracheotomy. He did not rely very much on the value of physical examination in very young children, nor did he attach much importance to the greater or lesser mobility of the larynx. At the same time he always examined very carefully with the stethoscope and with the hand, but there was nothing in the physical signs to indicate in the slightest degree what was the nature of the case.

In reply to the President, he admitted that there was retraction of the ribs during inspiration, but that of course would occur in any case of serious obstruction to inspiration. The temperature was 101° at night, but the child was not long enough under observation for him to have been enabled to draw any conclusion from the thermometric chart.

Dr. SANDFORD.—*Two Cases of Glosso-labio-laryngeal Paralysis.*

I venture to bring the following two cases of glosso-labio-laryngeal paralysis before the Association, partly in the hope that they may prove of some interest in themselves, but mainly with a view that, if the Fellows will be so kind as to give some of the results of their experience in similar cases, much interesting and instructive information may be elicited.

My first case is one of bulbar paralysis. The patient, a farmer, aged forty-six, a well-built man, apparently in perfect health, leading an active, out-of-door life, with absolutely healthy surroundings, and no specific history, consulted me on August 8th, 1891. He stated that some twelve months since he had noticed his "speech becoming thick," his "lips getting stiff," and a slight "hang" in swallowing. Of late all these symptoms had become more marked, and occasionally fluids had, on attempting to swallow them, returned through the nostrils. At present his pronunciation is almost unintelligible, his lips moving slowly, and with difficulty. His tongue can be protruded in the median line as far as the lips, but is quite incapable of any lateral or vertical movement. The mucous membrane is greatly puckered and covered with a dry, brown fur. The patient is quite cheerful in manner, and is in perfect health in every way, with excellent appetite and digestion, both pulse and respiration

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being normal, but he cannot swallow solid food. His sight and hearing are acute. There is no optic neuritis, and no evidence of further paralytic or ataxic symptoms. He states that he has lost flesh considerably, his present weight being eleven and a half stone. The urine contains quantities of sugar. The symptoms, of course, indicate lesion of an extremely limited portion of the floor of the fourth ventricle. It would be interesting to learn the opinion of those present as to the probable pathological condition, results of treatment, etc. In the fulness of time, I daresay, I shall have an opportunity of bringing under your notice the results of *post-mortem* examination.

My second case is one of unilateral glosso-pharyngo-laryngeal paralysis, the result of injury. The patient, T. K., aged twenty-seven years, was brought to me by Dr. Curran, of Killeagh, suffering from extreme hoarseness and pains in the neck. I found his left vocal cord completely paralysed; the soft palate was, on retraction, drawn to the right side; the tongue was on protrusion deflected to the left, its movement being otherwise perfect; the lips were slightly immobile, the patient being unable to whistle. The head was turned to the right front, the anterior margin of the left sterno-mastoid being flaccid, and some of its muscular fibres having apparently been ruptured. Any concussion, as in jumping or sudden turn of the head, caused severe pain in the back of the head and neck. He stated that two months previously he was leading a young horse, which suddenly reared and bolted, giving him a sharp twist round, and throwing him violently to the ground. He was carried into a house, and given something to drink, a portion of which, on his attempting to swallow, returned through the nostrils. From time to time he had coughed up small quantities of blood.

He was admitted to hospital and put on iodide of potash, with nux vomica, etc., the constant current being applied regularly for some time. The pains, etc., have completely disappeared, and he has returned to work, expressing himself as feeling quite well in every respect except for the hoarseness and difficulty in swallowing solid food.

The paralysis remains quite unchanged. The symptoms must, I should think, have been due to fracture through the foramen lacerum, or to injury by sudden violent extension of the seventh, ninth, tenth, eleventh, and twelfth nerves.

The PRESIDENT, in allusion to the second case, mentioned that of a young naval officer who had entirely lost the voice after a blow on the larynx. When he examined him he found there was immobility of one vocal cord, and he took it to be a case of primary inflammation from injury to the crico-arytenoid articulation. He recovered under enforced and absolute rest of the voice and the application of constant cold by means of Leiter's coil. In Dr. Sandford's case there seemed to have been a wrench, involving probably some injury to a nerve.

Dr. GRANT asked what was the condition of the tongue.

Dr. SANDFORD said it was deflected to the left side.

Dr. DUNDAS GRANT remarked that the symptoms in the second case differed to some extent from those of bulbar paralysis, and they appeared to be limited to the distribution of the spinal accessory nerve. There was

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paralysis of one sterno-mastoid, a muscle which was mainly supplied by that nerve, and the laryngeal motor nerves were derived from the accessory nerve to the vagus. In bulbar paralysis properly so called the laryngoscopic symptoms were usually bilateral, and the difficulty was either the production of voice or the respiration. He referred to one very peculiar case, in which the patient was unable to achieve anything in the nature of a cough because his laryngeal apparatus did not permit of the momentary closure of the glottis essential to this effort. In this case fortunately there was paralysis of the adductors as well as the abductors, or tracheotomy would have been necessary. In the second case the probabilities of recovery were slight indeed if after a little time the effusion which had taken place did not clear up.

Dr. STOKER mentioned a case of peripheral paralysis in the person of a gentleman between seventy and eighty years of age. The laryngeal troubles in his case were, as Dr. Grant had observed, bilateral. He had, however, no difficulty in respiration, though he had great difficulty in articulation. This did not arise from any want of power in the vocal cords, but from paresis of the muscles of the lips. He had a good deal of anæsthesia about the larynx, and had to eat with the greatest care to avoid choking. He could cough very satisfactorily, as he himself could testify, for the cough had often kept him awake at nights, he being in charge of the patient.

Mr. V. H. WYATT WINGRAVE.—*Some Points concerning the Lingual Tonsil, bearing upon a Regional Nomenclature of the Tongue.*

The absence of clear and definite terms in describing the different regions of the tongue has, doubtless, been observed by many of you. To speak of the "dorsum," the "root," the "sides," etc., is a very ambiguous method of localization. In the course of some histological and pathological observations connected with the tongue, specially directed to a region so interesting to laryngologists—the posterior third—a probable solution presented itself in the "sulcus terminalis." The parts in front of and behind this line are distinctly different, in structure, in function, in nerve supply, in development, and pathologically.

This line, the "sulcus terminalis," for all practical purposes, corresponds with the V line of circumvallate papillæ, which stand out like a series of martello towers guarding a region sacred to the laryngologist. The sulcus may not always be visible, but the papillæ are, unless destroyed by disease. At the point of the V is the so-called foramen cæcum, or the opening of the thyro-lingual duct, occasionally the seat of cysts, and always permeable to a bristle for a greater or less distance.

A glance at the development of their parts will help us considerably.

The tongue is formed in two divisions, one a solitary median mass, known as the "tuberculum impar," situated in the angular space between the first and second visceral arches; the other and posterior one arises from the junction of the second and third arches just behind the tubercle, and which are at first separated by a forked elevation of the embryo's pharynx, known as the "furcula," but which uniting form the so-called base of the tongue, pushed the furcula backwards; this becomes developed into the

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epiglottis, the ary-epiglottic folds and the arytenoid cartilages, whilst the median groove becomes the entrance to the larynx. Between the furcula and the tubercle is the "sinus arcuatus," into which opens the duct of the thyroid body; these eventually become the sulcus terminalis and foramen cæcum respectively.

The second arch becomes the anterior faucial pillar, whilst in the cleft behind it, is developed the faucial tonsil. The posterior pillar is subsequently formed from the palatine outgrowth of the maxillary process and not from the third arch. It will thus be seen that the two portions of the tongue have different developmental origins.

With regard to the structure, the contrast is striking even to the naked eye. In front of the sulcus are found conical and filiform papillæ with a few fungiform and circumvallate, whilst along the sides are scattered a few mucous and albuminous glands. But behind it we find something totally different.

First, there are the "lingual tonsils," clusters of lymphoid tissue with crypts or lacunæ lined with ciliated and stratified epithelium. This is an interesting feature and to which I would draw your attention, as I am not aware of ciliated crypts ever having been previously noticed. They are not found in the faucial tonsils, whose crypts are lined with much denser cells than the lingual. Next we notice the thyro—or sometimes called the hyo-lingual duct, lined with stratified columnar cells; and on either side, scattered irregularly, but in dense masses, are the mucous and albuminous glands of Salter and Henle.

The nerve supply is equally defined, for, whilst the anterior region has its afferent nerve in the fifth, the posterior part is supplied by the glosso-pharyngeal.

With regard to function, apart from the glandular suggestions, it is generally admitted that the true sense of taste, especially sensation of bitter, is located in the glosso-pharyngeal region, whilst the lingual gustatory is only responsible for sweet and ordinary sensations, *e.g.*, heat, cold, acids, &c. This is illustrated by the action of an Indian plant known as the "gymnema sylvestre," which destroys the appreciation of bitter and sweet taste only, and can easily be demonstrated by the application of electrodes to the tongue.

Pathologically, we find a marked contrast, for in the posterior half occur diseases with which the anterior is never affected, such as varicose veins, enlarged lingual tonsil, and other troubles arising in the lymphoid tissue. The ravages of lupus, tubercle, syphilis, also behave very differently in the respective situations.

A highly instructive and illustrative case is recorded in Vol. XX. of the "Transactions of the Pathological Society," in which a child died asphyxiated soon after birth, due to a tumour obstructing the glottis, which proved to be simply an enormous hypertrophy of the normal structure of the posterior portion of the tongue only, the anterior remaining healthy.

Finally, we have the different relative positions. When the tongue is passive, that part behind the sulcus is in the same plane as the anterior faucial pillars, whilst in deglutition it becomes wholly pharyngeal; there-

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fore, may it not be suggested that all that portion of the tongue which is anterior to the sulcus or V line should henceforth be called "oro-glossus"; that part behind it to be described as the "pharyngo-glossus"?

A nomenclature which enables us to definitely localize the particular region of the tongue in question is undoubtedly required, and these few remarks are merely suggestive of a possible way out of the difficulty.

The PRESIDENT thanked Mr. Wingrave for his very interesting communication, which was of much more practical importance than perhaps might at first appear.

Mr. Wyatt Wingrave also made some remarks *on some Characteristics (Histological) of Laryngeal Epithelioma*; and demonstrated the following microscopic specimens, etc.: 1. *Lingual Tonsil.* 2. *Epitheliomata.* 3. *Membranous Laryngitis* (recent specimen from a case of Mr. Jakins).

Microscopic Specimens. Some characteristics of *Laryngeal* and *Pharyngeal Epitheliomata.*

The preparations illustrate a feature of the stratified form of epithelioma, which I have so frequently observed in these situations as to deem them worthy of your attention. The cells present a beautifully marked crenation at their borders, similar to the "prickle cells" of the malpighian layer of the epiderm, giving a "cogwheel" appearance. They are difficult of demonstration by the ordinary methods of staining, but are readily shown by passing the section through Gramm's solution of iodine after the hæmatoxylene.

It may be suggested that this peculiarity is due either to the rapidity of their growth, the specially moist conditions of their situation, or to the physical effects of the reagents employed. Whichever may be the true interpretation, it is a feature probably possessing diagnostic value.

Hypertrophy of the "Lingual Tonsil."

This specimen is from a lingual tonsil removed by Dr. Dundas Grant from a woman aged thirty, and shows the crypts lined by well-defined columnar ciliated cells. In some of the depressions the cilia have disappeared, and in the more superficial part of the crypt are replaced by ordinary stratified epithelium. This case evidently illustrates the persistence of a fœtal condition, for it is extremely rare to find the lacunæ lined by ciliated bodies so late in life. I am not aware of this histological feature having previously had attention drawn to it.

Special Discussion.—The Necessity for Systematic Voice Training in Public Speakers, opened by Dr. SANDFORD.

Mr. President and Gentlemen,—I feel greatly honoured indeed in being asked to open a discussion upon this most important subject. I had only intended reading a "case illustrating the importance of systematic voice training, and the neglect which this subject has too commonly received," and was quite alarmed when I received a copy of the programme of this meeting yesterday to find the formidable task allotted to me. However, I took courage when I saw the names of those who will take part in discussing the subject, for I knew that our President, Dr. Dundas Grant

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and Dr. Farquhar Matheson are good for any amount of interesting information, and they will amply make up for my shortcomings.

The case I have referred to is an extremely commonplace one, indeed, so much so, that I should on this ground apologize for bringing it before you, but that herein I believe lies its chief importance. I am quite sure that similar cases are an everyday experience with most of our members, and it is with a view to remove, if possible, one source of so much practice that I would ask your kind forbearance while briefly sketching its principal features.

The Rev. M. A., a clergyman recently ordained, of uncommonly vigorous and robust frame, consulted me in December last, stating that he was quite unable to discharge his public duties from a constant feeling of weakness—almost approaching to pain—in his throat, and frequent hoarseness, his voice suddenly "breaking," and the effort to continue speaking being painful and ineffectual.

He had a few months previously entered on his first curacy with, as he said, a "tremendous voice," but without any training. The church is a fairly large one, and the service is intoned. From the first Sunday he felt very tired, and his voice quite hoarse after the day's work, but he continued for a month or two, hoping that this would "wear off." He found on the contrary that he was getting steadily worse.

At last, owing to unusual pressure of work, aggravated by a slight attack of influenza, he broke down completely, even ordinary conversation being distressing and disagreeable from the croakiness of his voice; and though he could still emit a few clear notes in a loud voice at high tension, this could not be sustained for any length of time.

I found his pharynx and larynx extremely hyperæmic, with considerable follicular hypertrophy of the pharyngeal mucous membrane and the tonsils. The cords were slack, with an utter want of tone.

Having relieved the local symptoms by the use of the usual sprays, etc., as well as by the application of the galvano-cautery to the enlarged follicles, I advised the patient before resuming work to seek instruction in the proper use of his exceptionally powerful vocal apparatus. He therefore placed himself for a month under the guidance of Mr. Behnke, whose scientific method of teaching, and admirable system for bringing out the voice, I have had an opportunity of observing.

The result was eminently satisfactory. A few weeks after returning home Mr. A. wrote that he himself and many members of his congregation were quite astonished at the change in his voice, and at the ease with which he could fill the church while speaking in his natural key. He felt quite fresh after his Sunday work, and an utter absence of the voicelessness and general physical fatigue previously resulting from the sustained effort. I saw him a few days since, and he told me that he continues to improve day by day, and finds life quite a different thing from what it had been a few months previously.

I believe that this case is typical of many, and that every day young men are launched from academic into public life, crammed it may be with useful information and brimming with original ideas, but handicapped by never having had their "mouths made." They have never

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been trained to use their voice skilfully, and when the pressure comes, the vocal organs break down under the strain. Public speaking is as different from ordinary conversation as rowing is from mere paddling, or as racing is from walking, and special physical training is as necessary in one case as in the other. The tongue may be as "a sharp sword," but even this latter is a comparatively feeble weapon under the sway of one untrained in its use. In the case of the untrained voice, the mischief does not stop at mere feebleness. Many chronic and wearisome throat troubles are due directly or indirectly to (or at least are kept up by) the constant strain of injudiciously used muscles. This influence is of course greatly aggravated in our damp, relaxing, rheumatic climate by atmospheric conditions. No one who has not experienced it can realize the depressing effect, both mental and physical, produced in the individual by the fatigue and vague ever-present laryngeal pain resulting from unduly strained muscles.

I am quite sure that some suggestion from this influential Association would have considerable weight in impressing upon educational governing bodies the importance of encouraging the study of voice cultivation. Attention to the subject would, I am convinced, diminish at least one fruitful source of throat trouble, and prove a boon to future public speakers, more especially in the divinity and other schools, where students are presumably prepared for a life in which the art of speaking in public is one of the most important elements in their education.

A special course in scientific vocalization, apart from elocutionary or other rhetorical embellishments, would be invaluable to most men preparing for public life, and a recommendation to that effect from this Association would at least bear the stamp of sincerity and unselfishness, for I have no doubt that such a course of instruction would deprive us of many patients.

Dr. DAVIES, of Newport.—*Stammering induced by Whooping Cough.*

My eldest son, Howard, though backward in talking as a baby, never had any speech difficulty until he had, during his fourth year, a severe attack of whooping cough attended by considerable pyrexia.

As there was no hereditary tendency in either parent, I paid very little attention to it, beyond correcting him, hoping that as he gained strength and grew older he would improve; but, instead of growing out of it, the inclination to stammering, slight at first, became a confirmed habit, and he gradually became worse until the time when he commenced to learn. The little difficulty had then grown into a very serious obstacle in the way of his studies, and was assuming such a serious aspect that I began to make enquiries among my medical friends for someone who could take the child in hand and treat him rationally, scientifically, and free from empiricism. The answers which I almost invariably received were, that the treatment of stammering had been practically ignored by the profession, and was mainly in the hands of quacks. Although determined not to patronize empiricism, I was almost giving it up in despair, when I quite accidentally heard of Mr. Lennox Browne as having operated on a little boy at Frome, and whom Mr. Behnke had subsequently cured.

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I at once sent Howard to Mr. Lennox Browne, and he very kindly performed an operation on his throat (removal of adenoids and a shortening of a very relaxed uvula), and advised my sending him to Mr. Behnke for at least three months. He was almost immediately sent, and commenced his residence just after his ninth birthday.

The first thing which Mr. and Mrs. Behnke appeared to do, was to inspire the child with confidence in himself and in his teachers; to make him feel quite at home and perfectly happy.

The next thing, as far as I could note, was to ascertain exactly, or as nearly as possible, where the defect lay, and its probable cause. They immediately discovered that the diaphragm was exceedingly weak, and that Howard had acquired a very vicious habit of talking during inspirations, and I may say in passing that this was an attempt of his own to cure himself under home teaching.

The moral effect of knowing that he *could* speak like other boys, combined with Mrs. Behnke's almost magical influence over him, together with the diaphragmatic drill and the placing all the other chest muscles at rest in the recumbent position, was so pronounced that in a few days, while lying down, he was able to go through his vocal exercises and could read easy books with scarcely any stammering or hesitation. This improvement was the more remarkable, as for years before he went under treatment, the moment he commenced reading aloud or reciting, the stammering and facial contortions were most painful and distressing to witness, and undoubtedly had a very bad moral effect upon him; from being naturally high-spirited and inclined to be despotic he was becoming shy and timid, and from being vivacious and talkative was becoming morose and silent. But under Mrs. Behnke's care Howard very soon acquired such confidence in his own powers of speech as to be able to take messages and do some shopping for her, which by the way was part of the treatment, and altogether assumed a much more manly, or shall I say boyish appearance.

At the expiration of the three months I am pleased to say that Howard was practically cured. He could speak, read and recite with ease, and only occasionally hesitated or came to grief slightly by carelessness in carrying out his instructions. For some time after his return home, the diaphragmatic drill and vocal exercises were most successfully continued by his mother, who had been specially instructed therein.

On one or two occasions when out of health, and during and after an attack of influenza he appeared to lose ground, but soon picked up again with care and a little practice in the exercises.

Since my attention has been drawn to stammering by my son having been a sufferer, I have heard of and come across several cases which have originated during an attack of whooping cough. Can this possible connection between the two diseases be due to over-distension and consequent partial paralysis of the diaphragm? Paralysis of the bladder from over-distension is too well known and recognized to be disputed, and the over-distension and consequent permanent weakness of the abdominal muscles in pregnancy is also a too common and unfortunate occurrence to require any comment. Is it unreasonable to suppose that the same thing takes place

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in some of these severe cases of whooping cough in children whose muscles are soft and flabby?

I should be very much interested to know if other of my medical *confrères* have observed this relationship between the two diseases.

If it can be proved that this hypothesis is impossible and untenable, can the stammering be caused by some slight brain lesion induced by the violence of the cough? or may not its severity have some injurious effect upon the nervous system through the emotions?

These cases are so numerous, so distressing, and so detrimental to the success in life of many who are otherwise healthy, capable of, and anxious to take their part in the battle of life, that I hope the disease and its curability will be recognized by the medical profession, so that the mental and physical sufferings of these cases, as well as their social disabilities, may be brought prominently before the benevolent and the philanthropic of our country. Then, I trust that the day may not be very far distant when we shall have a home or homes for their special treatment. [This little boy was then introduced to the Society, and created a great impression, not only by the absence of any speech impediment, but by the clearness of his enunciation of every syllable, and by the resonance and carrying power of his voice.]

Dr. FARQUHAR MATHESON, in his remarks, stated that in the training of the voice the early recognition of impediments or of abnormal conditions of the vocal mechanism, from their great importance and prevalence, demanded the full attention of an association like this. The subject, hitherto, has been altogether overlooked and neglected by the medical profession, and has been considered scarcely within the jurisdiction of the surgeon or physiologist. The development and training of the vocal organs, whether imperfect or normal, have hitherto almost exclusively been undertaken by teachers of reading, elocution and music. Although many of these gentlemen have done excellent work in this direction and are highly accomplished and successful in their art, it is clear that their training and education do not qualify them to deal with that very numerous class of voice imperfections arising from obstructions or impediments in the upper air-passages or malformation of the throat, palate, etc. This latter class of cases can only be successfully dealt with and improved by the skilful surgeon in the first place, and in a later stage by the assistance and co-operation of the elocutionist. Gentlemen like himself, who came daily in contact with numerous cases of diseases of the nose and pharynx, are constantly impressed with the deplorable imperfections of voice resulting from obstructions in these cavities, which at an early stage are quite amenable to skilful treatment. Enlargements of the turbinated bodies and deviation of the nasal septum were the most frequent causes. Whilst listening lately to a debate in the House of Commons he could not help observing the loss of force and attention which one or two of the speakers sustained in the delivery of otherwise capital addresses, through some impediment in the nasal passages, which could in their earlier days, or even now he thought, be easily rectified. But being somewhat misled by the title of the discussion he was not prepared to enter into details. He, however, again recommended the

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subject, as one of much interest and importance, to the notice of their Society.

Dr. Matheson offered some remarks on a collateral subject, to which he has given some attention, viz., stammering. Although he had perused almost the whole literature of the subject, he was bound to say that no full and satisfactory explanation of the causes of this malady has been given by any author, and few of the numerous systems advocated by different teachers for the cure of stammering are based upon sound and rational principles. In studying the conditions as regards health and the clinical history of every case of stammering, it will be observed that the principal feature presented is a highly nervous disposition—excitable, timid, and easily impressed. In this respect the malady has many points in common with many other nervous diseases, such as epilepsy, chorea, and even infantile rheumatism. In addition to this neurotic, or constitutional predisposition, there is almost in every case of stammering a second or exciting cause. These are very numerous, and vary in almost every case, and may be a sudden fright, a fall on the head, the irritation of teething, pharyngeal or gastric inflammations, diphtheria, chorea, etc., causing involuntary and spasmodic action of certain muscles over which the child has lost control. Whooping cough, especially if associated with measles, was a frequent exciting cause. But it has been ascertained beyond question from actual examination of stammerers that the principal factor in the causation of the disease is the existence of adenoid growths in the naso-pharynx, and obstructions and irregularities in the nasal cavities. These conditions are responsible for at least fifty per cent. of the cases we meet with, and the statement is proven and supported by the fact that upon removal of the nasal obstructions and growths the stammering is immediately relieved and improved, and in some cases cured, even without the aid of a teacher. It is also a fact that many stammerers suffer more or less from deafness. The subject and the views expressed still demanded further study and attention by the physiologist and surgeon, and with the co-operation of the skilled teacher it could be confidently hoped that many sufferers from stammering and other voice defects would be rescued from a painful and distressing imperfection.

Dr. ALTHAUS expressed the great interest he felt in the subject of the papers that had been read, and in the demonstration which they had just witnessed. It was really wonderful to hear the lad speak as he had done before such a large assembly. He had for some years past been led to form a very high opinion of the physiological basis and practical value of Mr. Behnke's method. It was not so much a method of training certain laryngeal and other muscles as a method for training a definite nerve centre, viz., that of speech. He had been confirmed in that view by noticing that an efficient training of this nerve centre tended to exert a beneficial influence upon other nerve centres. Certainly the cases he had sent to Mr. Behnke were not cases of simple stammering, but of stammering combined with mental instability and a general deficiency of brain power. One was a young man, twenty-four years of age, sent to Mr. Behnke some eighteen months ago, almost as a forlorn hope. He was the son of a gentleman of limited means, and had had an unfortunate career at school and college, being

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ridiculed by everybody he met. At that time he gave the impression to a casual observer almost of imbecility. Still, there was something to work upon. He could read and write tolerably well, and had a smattering of Greek and Latin. The question was whether he could be trained sufficiently to earn his living. Not only was there a marked improvement in articulation after six months of Mr. Behnke's treatment, but the patient had acquired a different aspect, was much more intelligent than before, and had lost all those little absurdities and mannerisms which formerly told so much against him. He had eventually been able to accept a situation as teacher, the duties of which he was reported to be discharging very creditably. The improvement all the way round in the case just mentioned could not be explained if we looked upon Mr. Behnke's method as one for training muscles only. It did much more than that, and the results of training of the nerve centres in this case had surpassed his expectations. Dr. Althaus also referred to another case, not quite so severe, in a boy aged nine, observing in parenthesis that children were always easier to train than adults. This lad had always shown a considerable amount of mental deficiency. The way in which he answered questions and looked vacantly round him when spoken to, and the awkwardness shown in spelling or writing, were those of a not very advanced child of five or six. He had an opportunity of seeing that boy again, after he had been six weeks with Mr. Behnke, and the result was marvellous. There was not only an immense improvement in articulation, but the whole aspect of the case had been changed. There was a long neurotic history in this patient's family, which made the case a particularly difficult one ; and the fact that in so short a time such a radical change should have taken place, spoke volumes for the efficiency of the method of training to which he had been submitted. Dr. Althaus expressed his pleasure that the subject had been brought forward at this Association, and he would like to impress upon them the practical value of Mr. Behnke's system, not only in cases of ordinary stammering, but also in those in which stammering was only one of the symptoms of general nerve disturbance and instability.

Dr. DUNDAS GRANT said he took part in this discussion chiefly because he wished to bring before the Society a case which they had already seen last year. After one of their meetings in the past year they had had the privilege of listening to an address on stammering by Mr. Behnke. On that occasion he (Dr. Grant) had selected at hazard from among his out-patients a case, totally unknown and unexpected, of severe stammering ; as severe a case as could well be met with. The patient was altogether incapacitated from any occupation involving oral communication. He "sprang" this man on Mr. Behnke, who at once went through his usual probatory examination, with a result which was astonishing to them at the time. He felt very strongly that it would be a pity that such a discussion should be allowed to fall to the ground for want of the ventilation such an association as theirs could give it. It was by no means a merely medical question, nor a question affecting only throat specialists, though it was one, nevertheless, which at a meeting of throat specialists could be most properly discussed.

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In their dealings with the outside world they came across glaring cases in which the want of training for public speaking made itself apparent. It was a political, a social, and even a theological question. At the House of Commons, or at its humble analogue the Codgers' Hall, one could not but be struck by the fact that some speakers there often utterly missed their points from the very ineffective way in which the matter was brought forward. Others again, with very little to say, managed to score, owing to their attractive manner of delivery. In this respect their Irish brethren ran away ahead of them all by the fascinating manner in which they put forward their ideas. The English came much behind, and he would warn them that if they wished to keep whatever political supremacy they might be entitled to, it was important that their speakers should be armed with vocal qualities which would enable them to meet the eloquent advocates of Home Rule or other measures on equal or advantageous terms. It was essential to the welfare of the community and the race that certain questions should be thrashed out upon their merits and not condemned—practically unheard—on account of the vocal defects of those who were charged to defend them. The same remark would apply to all the liberal professions. Those who attend places of worship were often very much shocked by the feeble attempts at elocution to which they were constrained to listen. The Church would have to bestir itself, and would have to make its ministers take lessons in elocution before entrusting them to advise to better modes of living. Until it did so, "clergyman's sore throat" would not disappear, and the Church would not realise the amount of good influence of which it was capable.

Passing on to discuss the causation of stammering, he said the causes were so numerous that they might be found wherever one looked, whether locally in the throat and nose, or constitutionally in the general health and the nervous and other systems.

The statistics brought forward by Dr. Matheson were certainly interesting, but, in order to appreciate their full significance, it was necessary they should know the frequency of adenoid vegetations in stammerers compared with school children generally, and the frequency with which adenoids were accompanied by stammering. Then they would be in a position to decide whether the connection was accidental or essential. In reference to the neurotic element, he pointed out that there was a certain cerebral irritability capable of inhibiting the centres for speech, just as the same cerebral irritability might inhibit that centre which, in its turn, inhibited micturition. The great object in view of this was to divert the surplus or irregular cerebral energy into another area. Mr. Behnke's was certainly a useful practical classification. He applies the diaphragm drill tentatively in all cases, and produces an improvement in a large proportion almost immediately. These cases he classifies apart, and gives a favourable prognosis as to improvement under respiratory gymnastics. At the same time Dr. Grant did not hesitate to affirm that there was something more in this system of training than a mere mechanical working of the diaphragm. He did not believe that it was possible for everybody to take up this plan of treatment and work it as Mr. Behnke did. There was an individuality about Mr. Behnke, and it

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was to be hoped that he would not only provide for the relief of individuals, but would take care to train up around him teachers capable of carrying on his good work for the benefit of sufferers at large. He could evidently not treat all the stammerers in existence, and he thought his system ought to be extended and perpetuated.

[The patient, to whom Dr. Grant had alluded, was then brought before the Society, and was asked to recite aloud and to sing musical notes. He spoke in a measured tone, free from any suspicion of stuttering or hesitation, and in reply to a question, he said that since the course of training his singing voice had markedly increased in volume. Dr. Grant pointed out also that his general physique had improved *pari passu.*]

Mr. EMIL BEHNKE—Mr. President and Gentlemen,—As you have kindly invited me to take part in this discussion I desire to avail myself of the opportunity for the purpose of once more emphasizing the three chief points upon which we insist in our teaching :—

They are, first, the necessity for medical co-operation ; secondly, the necessity of diaphragmatic drill : and thirdly, the necessity of paying proper attention to the mental aspect of stammering.

I. (*a*) The necessity for medical co-operation is proved anew by a case which is at the present time under the care of my wife, who attends to all lady pupils and young people. It is that of a little boy who was utterly unable to pronounce any vowel without prefixing it with a hard *g*, or a *k*. Thus, instead of saying "I am going out," he would say "Gi gam going gout," etc. Now the elocutionary remedy for this defect consists in exercises for educating the soft palate, and for giving the speaker proper control over it. We found, however, that, in this particular case, the soft palate was so weighted by enlarged tonsils and an elongated uvula that our efforts to enable the little patient to raise it to any considerable extent were fruitless. We therefore communicated with the parents, who took the child to Dr. Greville Macdonald. This gentleman discovered that, in addition to the enlarged tonsils and the elongated uvula, there existed a considerable mass of adenoid vegetations which, extending towards the Eustachian tubes, were responsible for a certain amount, not exactly of deafness, but of want of power to appreciate the refinements of speech.

The child was operated on accordingly, which not only removed the direct obstacle in our way, but also a source of perpetual irritation, which would undoubtedly have constituted an insuperable bar to the boy's progress. Under these new conditions, however, he quickly responded to teaching, and learned to raise the soft palate smartly, with the result that he is now able to utter his vowels without an abnormal consonantal prefix.

I think you will agree with me that it would be difficult to find a case more strikingly illustrating the necessity for medical co-operation than this.

(*b*) Now, with regard to diaphragmatic drill, it has been suggested that its beneficial effect upon a stammerer's difficulties largely arises from the fact of his attention being thereby diverted from his speech trouble. I

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have no doubt this is the case to a certain extent; but there is something beyond it. Respiration, although a perfectly automatic process, may be trained and brought, more or less, under the control of the will.

But it is possible to accomplish more difficult things than this. For instance, I have trained myself to get control over the tensors of the membranes of the tympana for the purpose of shaking off a certain amount of deafness which frequently troubles me; and it is on record that Dr. E. Weber caused his heart to stand still after a prolonged course of training for slowing the pulse, and that he very nearly died of the experiment.*

The extent to which control may be obtained over the action of the diaphragm is astonishing, and can only be appreciated by those who have seen obstinate cases under treatment.

(*c*) With regard to the mental aspect of stammering, it has been pointed out to me that the difficulty arises in the cortex of the brain rather than in the medulla. I have always understood that the cortex has to do with language, and the medulla with speech; and stammering is clearly an affection of speech, and not of language. It is not, however, of any practical importance to me as a teacher whether the one theory be right or the other. My great point is this: it is a *sine quâ non* for the teacher to gain not only the confidence, but even the affection, of his pupils, and to acquire the most perfect and absolute control over them, so as to be able to lead them to cultivate habits of calmness and of self-reliance. Failing this, all mechanical exercises will be utterly wasted.

So much for stammering. It should be distinctly understood, however, as my friend and fellow worker, Mr. Lennox Browne, has often insisted, that the same principles underlying the treatment of this defect also underlie the proper training of voices for speaking as well as for singing.

It is hardly necessary for me to call the attention of a medical audience to the obvious fact that the teacher of voice culture is quite unable to do himself justice while the vocal apparatus of the pupil is not in a normal condition; but I may, perhaps, mention to you a case in point, which I had recently under my care, and which is instructive as well as amusing. I was consulted by an actor who wished to improve his voice, and I soon discovered that he suffered from a want of nasal resonance, which was, no doubt, caused by some obstruction of the nasal passages. Upon testing him with a lighted match I found that he was unable to blow it out through either nostril, and I advised him to consult a doctor before commencing lessons, which he did accordingly. To my astonishment the doctor ridiculed the idea of there being anything the matter with his nose. But, in spite of my best endeavours, I completely failed to increase the resonance of my pupil's voice, and I urged him once more to consult his medical adviser. The doctor, however, adhered to his first opinion, and I parted with my pupil, feeling that he was wasting his time and money by taking lessons which were perfectly useless. He then went to America, and after his return home gave me a

* "De Pulsu resorptione, auditu et tactu," by Dr. Ernst Weber. Leipzig, 1834.

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call, when I was struck by the wonderful improvement in his voice, and said to him at once, "Ah! now you have had your nose operated upon." This greatly astonished him, and he said that he should not have thought I could have immediately discovered that; but it was a fact. He had consulted a throat specialist in New York, who discovered that his nasal passages were almost choked with vegetations, so much so that it took several sittings to remove them all by means of the galvano-cautery. The effect of this operation was not, of course, immediate; but after the lapse of some six or eight months, when the mucous membrane had assumed a normal state, the improvement in his voice was simply marvellous.

II. Now with regard to breathing. It is quite clear that the management of the breath is of as much consequence to the voice-user as is the management of the bow to the violin player; and this management can only be obtained by getting proper control over the diaphragm.

Time will not allow me to enter fully into this subject, but I may relate to you a conversation that took place between a medical practitioner, who was a pupil of mine, and myself. He wanted me to explain to him why I considered diaphragmatic breathing so infinitely superior to clavicular breathing for voice use. I asked his permission to answer his question by giving him a demonstration, and then sat down to the piano, singing a great number of staccato tones, inviting him to watch me very closely, and to discover, if he could, my breathing places. He failed to do so, and was surprised to find, by placing his hand on my abdomen, while repeating the experiment, that I was able to take a short inspiration before *every single tone.* He admitted that such a result would be quite impossible by means of clavicular breathing, and that I had perfectly answered his question.

III. Finally, with regard to the mental aspect. All exercises should be carried on under the direct influence of the mind, and mechanical practice alone will never be satisfactory. This is, however, a vast subject, upon which a large book might easily be written, and I am afraid that I have already taken up far too much of your valuable time.

I will, therefore, conclude by thanking you very sincerely for the generous support so many of you have kindly extended to me this afternoon, and by also tendering my grateful thanks to the editors of the JOURNAL OF LARYNGOLOGY for the signal honour they conferred upon me, as a non-medical writer, by devoting a leading article to the consideration of my paper on "Stammering."

Mr. MAYO COLLIER, speaking to the subject of costal *versus* diaphragmatic breathing, pointed out that in the last edition of Mackenzie's "Hygiene of the Vocal Organs" there was a chapter written by himself which had especial reference to the method of breathing related on this occasion by Mr. Behnke. Also in one of the numbers of the JOURNAL OF LARYNGOLOGY they would see that he had endeavoured to prove mathematically that the method of breathing described by their President and Mr. Behnke was not only not the correct one, but was positively incorrect. In the article to which he had referred he pointed out that the old Italian masters taught that one should take in air with a concave stomach. In Greek statues the performance of great efforts was depicted

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with a hollow abdomen. Moreover, in divers the method was to draw in the abdomen and dilate the chest. He had referred in that article to Mr. Behnke's book and to the practice taught at the Paris Conservatoire by Mandl and others.

Mr. Collier then demonstrated on the blackboard by the aid of the formula $V=\frac{H}{3}\pi r^2$ that the extra breathing space obtained by depressing the diaphragm to its fullest extent was considerably less than that available if the base of the thoracic cone were enlarged to a very slight extent, by contracting only those fibres of the diaphragm which pulled the lower ribs upwards in the proportion of 300 cubic inches to 324. That showed that the teaching of the old Italian masters was right.

The PRESIDENT said Mr. Collier had alluded to clavicular and costal breathing as if they were interchangeable terms, but as a matter of fact they were quite distinct. Diaphragmatic breathing *must* be followed up by costal extension, and this was always taught by Behnke and himself, but it was quite another thing when it became a question of carrying on the costal distension till it led to the raising of the clavicle. When breathing was commenced by depression of the diaphragm, and extended to rib breathing, the fault of elevation of the clavicle was barely suggested, and diaphragmatic drill was indeed a correction of that fault if it existed; but breathing commenced by the method called costal was very apt to lead, and almost always did lead, to elevation of the clavicle, a mechanism which, to quote Morell Mackenzie, "is seldom brought into play, except in the dire struggle for breath when suffocation is impending."*

He did not care a fig for the figures on which Mr. Collier's demonstration was based, and he insisted that the spirometer afforded a much more reliable test of breathing space than any mathematical calculations which were based on a series of unproved and unprovable assumptions. He had employed this test for years with results which had never failed to confirm his views. He asked anyone to try the effect with a spirometer in a pupil taught by Mr. Behnke to use the diaphragm, and one who did not use the abdominal muscles. He confessed that he did not understand Mr. Collier's figures, but he flattered himself he did understand the readings of a spirometer. He mentioned the case of a young man, engaged in evangelical work, who came complaining of weakness of voice. He then spoke in a childish treble. The spirometer gave 200 instead of 260 cubic inches, which was his mean according to Hutchinson's tables. Under diaphragmatic training he acquired a man's voice, which he had never possessed before, and at the same time he gained 60 cubic inches of breathing capacity. This case was but one of many. Another case was that of an old lady with complete loss of voice. This was restored by faradism, and she then underwent training. The respiratory powers were so feeble that she hardly moved the needle of the spirometer, and with every effort only registered 9 cubic inches. After six daily lessons she scaled 90 cubic inches, and held her restored voice. He further related the case of a minor canon of St. Paul's Cathedral, who had a breathing capacity in excess of the normal, but did not know how to economize it,

* "Hygiene of the Vocal Organs," Seventh Edition, 1890, p. 84.

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and therefore failed in "attack" of his notes. Under proper treatment he entirely recovered, though he had almost lost his singing voice.

There was a class of cases arising from fatigue of the voice, called by Morell Mackenzie "spasm of the tensors," but better denominated by Prosser James as "stammering of the vocal cords." He remembered two remarkable cases of this in clergymen. The treatment in past days consisted always in faradization and the administration of nerve tonics. They were just such cases as those brought forward by Dr. Sandford. Sometimes the subjects of it could speak with ease in ordinary conversation, but the moment they tried to do duty control of their voice entirely failed them, resulting in spasmodic treble with intervals of hoarseness. The President had sent one such case, afflicted for years, to Mr. Behnke, and in a very few weeks he was able to preach in Chichester Cathedral, and had since done regular duty. Another was the son of an eminent physiologist, who had to give up ministerial work entirely from failure of his voice. He had been sent abroad, but had never regained his voice. He was then about twenty-seven. Time passed on, and when he was forty years of age he consulted the speaker. In reply to a question as to what were his special voice occupations, he said he lectured on religious history and Hebrew. Curiously enough, he had no difficulty with the Hebrew, but the history tried him terribly. This was explained by the fact that in the latter he stooped a good deal to consult notes as to facts and dates. This was in 1884. He was put under diaphragmatic drill, his breathing at that time being very shallow, and accompanied by much clavicular elevation. As he went on learning, he not only lost all the spasmodic speaking, but developed a singing voice, and later on he came to ask whether he could not go on further for the purpose of advancement in this gift. The President stated that he would be very pleased to see this matter put to the test, and he asked Mr. Collier whether he would submit to that of the spirometer.

Lastly, with relation to this point he denied that the old Italian masters really taught the method which Mr. Collier supposed. Certainly those who were supposed to have their traditions, such as Lamperti and his disciples, taught that respiration should be commenced by descent of the diaphragm, and this not only for a fuller inflation of the lungs, but for the purpose of steadying and controlling the exit of the air in attack. Mr. Lennox Browne admitted that his was not the system taught at the Paris Conservatoire, and the result was that French voices, as a rule, fell to pieces more quickly than others who adopted the more rational mode of training, and were noted for the obnoxious fault known as *vibrato* or *tremolo*. It was this circumstance that led Mandl to write his well-known treatise, in which he proved to demonstration that fatigue of the voice was mainly due to improper breath management.

The question of stammering was very interesting to him, because, as already stated by Mr. Behnke in his very practical address, there was a great analogy between that condition and the faults of voice in adult life. Some he had alluded to, namely (1), an inefficient filling of the lungs—imperfect bellows power—and (2) a want of economy in emptying the lungs for the purposes of voice—a waste of bellows power. Of

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those that remained, there were (3) the carrying *up* of the lower register of the voice instead of bringing the upper one *down*; this was quite as frequent a fault in speakers as in singers, and was responsible for what is known as a "hole" in the voice; (4) ignorance of how to use the soft palate, and other conditions leading to deficient resonance; (5) speaking in an unduly loud voice; (6) in an unduly high pitch of the voice; these two were by no means one and the same thing. Lastly, there was an affected manner of speaking, which he ventured to think was peculiar to the clergy, and more especially to the English clergy. It was not common to Nonconformist ministers, and was quite absent in the orations of barristers and lecturers.

All the other faults named, and others which for want of time could not be even mentioned, were responsible not only for much ineffective speaking, but for many diseases of the throat. It was the duty of the throat specialist in these cases, as of any doctor in all other cases, when he had cured the disease, to indicate to his patient how to avoid recurrence, and in the case of the suffering voice-user this could only be done by correction of his faults at the hands of a voice trainer. He (the President) was delighted that this subject had been suggested and so well introduced by Dr. Sandford, and he was more than gratified at the ample testimony given by so many Fellows to the power possessed by his friend and co-author, Mr. Behnke, to supplement the efforts of the doctor. For himself, he could but say that, whereas before he knew Mr. Behnke he was only able, as were others, to give temporary relief to clergymen with sore throats, since he had had the advantage of Mr. Behnke's co-operation, a very large majority of his cases had been permanently cured of their ailments, and their important duties had, therefore, been performed not only with comfort, but with increased efficiency.

Dr. SANDFORD then moved, as a formal resolution, that "It is the "opinion of this Association that insufficient attention has hitherto been "paid to the subject of voice training as a branch of education, especially "as regards preparation for public speaking. Also that in addition to "increased personal comfort and public advantage to be obtained from "proper voice cultivation, many serious diseases of the vocal cords would "be prevented by methodical training in their use."

This motion was seconded by Dr. DUNDAS GRANT, and carried unanimously.

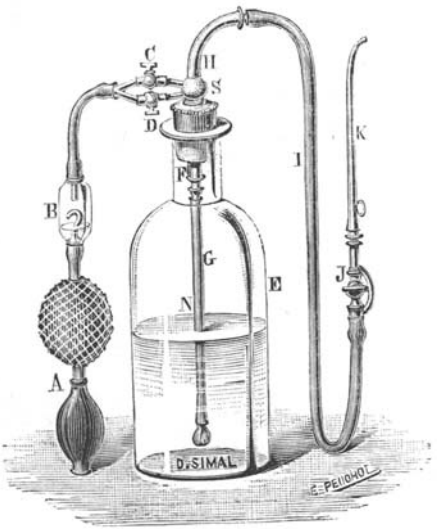
A vote of thanks was also accorded to Dr. Sandford for having brought the question forward, and to Mr. Behnke for having contributed his valuable remarks to the discussion.

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THE SOCIETY OF LARYNGOLOGY, OTOLOGY, AND RHINOLOGY, OF PARIS.—*Continued.*

An Apparatus for giving Insufflations of Antiseptic Air, or Medicated Vapours and Injections into the Tympanic Cavity through the Eustachian Tubes. By Dr. GILLES.

Use of the Apparatus.—Irrigation of the tympanum through the Eustachian tube in suppurative otitis of the middle ear or of the mastoid cells is by air or watery douches, and therefore necessitates special apparatus for each. The apparatus presented is designed to avoid multiplicity, and to distinguish its double function I have called it the "Insufflato-Injector." It permits either antiseptic air, medicated vapour, or appropriate liquids to be thrown into the tympanum through the Eustachian tubes.



Description.—The apparatus consists of three principal parts: (1) a special bellows, (2) an intermediate piece, (3) a terminal portion or catheter carrier.

The bellows is fixed to the middle piece, which is adjusted to a bottle, which in turn is attached to the catheter carrier by a special system of caoutchouc tubes. The two last pieces are of metal. If a catheter is added to the terminal portion, the apparatus will be as in the first figure.

1. *Bellows.*—Richardson's double ball, with a reservoir charged with a volatile antiseptic solution, attached to its extremity, constitutes this part. The antiseptic reservoir is the little glass ampulla fixed to this bellows. Five years ago I devised this, and presented it to the International Congress of Laryngology and Otology on October 18, 1889, *à propos* of the communication of Dr. Ladriet de la Charrière, who kindly mentioned it. It is a closed glass cylinder traversed by two tubes inside. One is rectilineal and in the axis of the cylinder, and of one-third the length of this axis; the other is curved, so that its internal orifice also lies in the

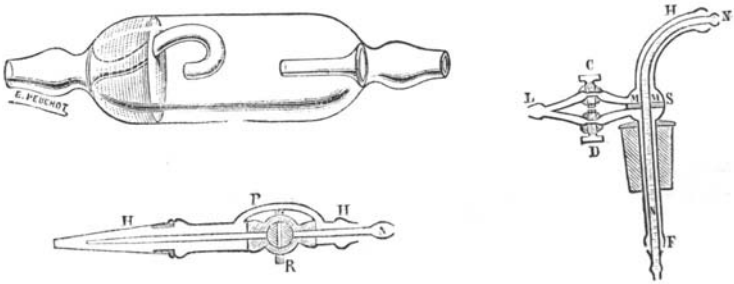
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axis of the cylinder, the end being about half a centimètre from the orifice of the upper tube. Between these tubes and the walls of the cylinder are *cul-de-sacs* for liquid to lodge in the various movements which may be given to the cylinder and without possibility of its escaping. The ampulla must, however, only be one quarter filled, for if greater it might escape through the tubes. These latter are continued into olivary enlargements and the volatile liquid poured out by the rectilinear tube can escape only as vapour under the action of a current of air. Thus intercalated between the Richardson bellows, or a ball and catheter, the medicated reservoir replaces the large apparatus of Bonnefont and similar apparatus. It may also serve for other uses, *e.g.*, insufflation of powders and inhalations.

The small size of the apparatus for insufflation makes it easily transportable, and it has the advantage of costing very little and fulfilling all the conditions of its predecessors.

2. *Middle Portion.*—For irrigation it is necessary to apply the bellows to the middle portion, constructed as follows:—

Two tubes with stopcocks C D spring from one olive, L, to which is fixed the bellows, one tube opening into the upper part, and the other into the lower part of a hollow globe. This is continued at its upper part into a large tube, H,



which, at first vertical, soon becomes horizontal, and at its lower part into a similar tube, H ', of the same calibre; a washer and a ring, or a perforated caoutchouc cork, fixes it into any bottle. The upper globe is divided off from the lower by an equatorial partition, M M. Crossing the centre of this and joined to it is a tube, N N, prolonged into the other tubes, H H', which it projects from at each end two centimètres, fixed solidly to their extremities. The lower end carries a caoutchouc tube long enough to reach to the bottom of the bottle.

System of Caoutchouc Tubes.—There are two tubes of different calibre, the larger enclosing the smaller, the larger being continued on to the catheter carrier, the external tube of which is of the same diameter, the smaller tube being continued exactly the same on to the inner tube of the middle portion.

Catheter Carrier.—An external tube joined on to the external caoutchouc tube encloses a second larger by two centimètres behind, which at this place is attached to the small caoutchouc tube. The middle part of the catheter carrier has a construction enabling the instantaneous arrest of the liquid contained in the inner tube, and this is essential if the injection is to be followed by an insufflation. This is obtained by making the inner or water tube leave the axis of the air tube, and is placed so as to allow of a stopcock, R, and it afterwards joins the water tube again. At the point opposite to where the water tube leaves the axis of the air tube this last is reduplicated. Its upper part soldered to the water tube forms a *cul-de-sac*, its lower free part open at the point of exit from the small tube is

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closed and continued by a tubular loop, P, which rejoins the body of the catheter carrier at the point where the water tube retakes its former direction. The two concentric tubes terminate in the catheter carrier. The external tube has a screw for a small cylindro-conical piece which carries the catheter, the internal tube being carried nearly to the extremity of the cone. This apparatus has been constructed very carefully by M. Simal.

Uses of the Apparatus: (A.) *Insufflation.*—Open the upper stopcock C and close stopcocks D and F. Air drawn by the bellows A is charged on passing the reservoir B with antiseptic vapour, and through the tube C enters the upper division of the globe S. Shut off from the lower section of the partition M M, it can only issue through the upper tube H. It flows thus through the ring formed by the tubes H and N to the catheter carrier, follows the loop P, and exits by the cone to the catheter K.

(B.) *Irrigation.*—Close the stopcock C, and open those D and R (opposite to insufflation). The air compresses the liquid contained in the bottle E, which flows through the tube N to the catheter, following the direction from N to R, where it is stopped by the stopcock.

(C.) *Douche.*—If a copious douche is required, open the three stopcocks C, D, R. Then the current of air breaks the jet of liquid going out from N, and projects it from the catheter as a coarse spray. If we wish immediately to return to insufflation, close stopcocks D and R, and air alone will pass out. If the stopcock R of the catheter carrier were not there, we should have to drive out all the water in N before obtaining an air douche. The loss of time is prevented by the stopcock R. This latter being open, and the tube N empty, there is produced during insufflation the return of a certain quantity of air in the bottle by the tube N, to the detriment of the power of insufflation in the tympanum, a serious inconvenience which, along with the impossibility of immediately arresting the injection, demonstrates the necessity of the stopcock R.

Method of Employment.—By a loop fixed to the bottle neck; this is hung from the left forearm, the bellows is held in the left hand, and the catheter carrier and catheter in the right hand, and this maintains the catheter in place, the left hand opening and shutting the stopcocks. Suspending the bottle from the wrist has many advantages; it cannot be upset, and sudden involuntary traction upon the tubes is not produced, and the length of the tubes so as to increase the intensity of the douches can be easily regulated.

General Remarks.—The addition of a reservoir of volatile antiseptic is of prime importance. If it is necessary to insufflate air into a purulent cavity, it is indispensable to rid it of any noxious germs, which is obtained by the mixture of air and antiseptic vapour. The reservoir, being one with the bellows, follows the movements of the latter without possible exit of the liquid, and it gives facility of manipulation. Bronner, of Bradford, at the International Congress of Paris, presented an instrument for ultimate douching of air and liquids. This apparatus differs essentially from the insufflato-injector, the air entering the catheter by a single tube without asepsis. The water tube, also single, enters the catheter, which is provided with two mouths. The apparatus, besides necessitating a special catheter, can only give as an injection a "spray." This, however, was the object sought by his apparatus. He said, in reference to the usual practice:—"A column of "liquid is injected into the middle ear through the Eustachian tube, and conse- "quently cerebral symptoms are sometimes seen. Most of the water passes into "the pharynx, and not into the Eustachian tube!" There is, therefore, the dilemma of injecting the tympanum and running the risk of provoking deafness at

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least, or not opening the Eustachian tube and making the patient swallow a disagreeable solution. Both these accidents are, however, rare, and always easily avoided: the first, by an equal and continuous pressure of air, which is obtained by Richardson's bellows; the second, which is usually caused by a plug of mucus in the Eustachian tube, by the energetic inflation and, if necessary, by the passage of a dilating bougie. Lastly, I have some doubts as to the efficacy of the means recommended. It appears difficult to believe that the douche, in its course from the mouth of the catheter to the tympanum, can enter this with the same force as when propelled, and that it will be a spray, as imagined by the author. Bronner having rejected continuous irrigation through the Eustachian tube, extended this ostracism to injections driven from outside.

"Surgeons have taught us that it is not a surgical proceeding, for we drive the "pus into the surrounding, and until then unaffected, tissues, and in many cases "of suppurative otitis, cause cerebral and mastoid complications." From this we should be right in concluding (1) that these surgeons, when they treat a purulent cavity, commence in all cases by establishing a counter opening, to save the neighbouring tissues which the pus, driven by injection through the first opening, would contaminate, and (2) that they made a second opening a *sine qua non* of rational treatment. Such a conclusion would be extravagant, and I prefer to believe that surgeons are not so absolute in their statements. However this may be, Bronner proposed to irrigate the tympanum in suppurative otitis by injections exclusively through the Eustachian tube, which is precisely the counter-opening permitting the avoidance of any complication. If aurists continue to inject the tympanum from outside, is this not because they consider cerebral and mastoid complications to be only exceptionally the result of an injection, and that they consider these complications, independently of the method of injection, would be produced quite as well by injecting the tympanum through the Eustachian tube. For my part I incline to this view, and do not find in Bronner's argument sufficient reason for adopting the nasal passages exclusively.

Conclusions.—If I have dwelt upon Bronner's communication, it is because I desire to establish clearly that our respective apparatus differs as much as our manner of making the application. I do not ask you to replace the douche by the spray, and I do not propose to abandon injections from outside, so long as access to the tympanum is easy through the external channel. But it is not always so, and in many cases irrigation through the Eustachian tube is necessary. It is in these cases that the insufflato-injector will be found useful and superior to the ordinary method.

In the first place it has the advantage of rendering the insufflated air aseptic. In place of a series of instruments, there is only one convenient apparatus allowing of the rapid transition from injection to insufflation and *vice versâ*, as often as necessary; avoiding loss of time and manœuvre painful to the patient, however great may be the dexterity of the operator. The use of this apparatus is not limited to irrigation of the tympanum. It permits the use of a compact jet of fluid or a spray to irrigate all cavities. A Hartmann's canula, a sinus canula, or a nasal olive may be fixed on the carrier.

If it is desired only to give an insufflation of medicated vapour into the tympanum, or the respiratory channels, it may be utilized for the purpose of substituting for the reservoir containing the antiseptic solution another charged with the volatile medicament desired. The carrier will take the instrument suited to the cavity.

Another use of the instrument is that it may be transformed into a thermo-cautery. This will be the subject of another communication.

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A Case of Retro-tympanic Sanguineous Pseudo-Cyst of the Left Ear. By Dr. MÉNIÈRE.

In March, 1891, a lady sought advice on account of violent humming noises in the left ear, of about six months' duration. She was thirty-six years of age, and obviously of scrofulous constitution. She had had in 1888 an acute median otitis, which became chronic. In October, 1890, the discharge stopped, and she was assured that the membrane had healed, but a month later she observed in her left ear a noise which gradually increased, and pulsated synchronously with the heart-beat. Catheterization and general treatment were tried for some time in vain, and she then came to Paris. Dr. Ménière found nothing abnormal in the drum except that at the postero-inferior segment the membrane appeared thicker than elsewhere. The Eustachian tube was free, and auscultation revealed nothing abnormal. Loud conservation was audible at from four to five mètres. On re-examination Dr. Ménière applied a probe to the thickened point, and found it hard, but apparently less sensitive than the rest of the membrane. He introduced six drops of a mixture of glycerine and coal-tar (30 to 5), and closed the meatus. Next day the point appeared of a greyer tint and more prominent. On examination with a delicate hook the part seemed slightly movable above. He then succeeded in detaching a small, hard, flattened mass, which was adherent below. Two or three drops of very dark blood escaped, and the patient cried out that her "noise had disappeared." The mass was removed and found to be three millimètres in height, two in breadth, and one in thickness. There was no perforation, but the tympanic wound felt granular to the probe and bled slightly. The little granulations were touched every few days with saturated solution of chloride of zinc, and then with carbolized glycerine. After eighteen days of this treatment it was found that there was a passage of air through the membrane on inflation. In July the oozing from the drum was scarcely perceptible, but the perforation continued and the hearing improved.

Dr. Ménière thinks probably the perforation had been simply blocked up by the medicated powders which had been insufflated. An effusion of blood had taken place, and had formed a clot which had organized and, so to speak, encysted itself. Epidermic proliferation had led to the formation of the covering which was detached. On this account Dr. Ménière used the designation "sanguineous pseudo-cyst." To this he ascribes the pulsatory noises, because they disappeared at once on the removal of the crust.

Dr. LOEWENBERG asked why the condition should be called "pseudo-cyst," and Dr. Ménière replied that he did not know any better name for it.

Dr. GELLÉ explained it as follows: first, a perforation, then a group of granulations, one of which became the seat of an encysted hæmorrhage.

On the Anatomy of the Middle Ear. Sections in Series. Demonstration of Specimens. By Dr. H. CHATELLIER.

The petrous bone of an adult was removed by the saw, placed in Muller's fluid, decalcified in pure formic acid, hardened in successive strengths of alcohol, embedded in collodion, cut with a microtome, stained with hæmatoxylin and eosin, and mounted in Canada balsam. The sections were so made that the razor passed in (? parallel to) the long axis of the malleus. They are numbered from before backwards.

He wished to draw the attention of the Society to the mode in which the *recessus epitympanicus* ("attic" of the American authors) was partitioned off from the tympanum proper.

In front the petrous bone forms a horizontal ridge, directed from without

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inwards, the prolongation of the tympanic margin on the anterior wall of the middle ear reaching inwards to the cochleariform process. Above this is a recess —the anterior part of the epitympanic space—below it a gutter-shaped depression, which forms the posterior wall of the meatus and tympanum. It is to be remarked that the attic extends further forwards than the rest of the tympanum.

In sections further back the ridge is seen extending inwards for about 3·3 millimètres. As the transverse diameter of the tympanum is there 5·5 millimètres, only two millimètres are left for the opening where the attic communicates with the tympanum in front of the malleus. A little further back we come to the malleus, the lower part of the head corresponding to the tympanic margin. Between the two there is only a millimètre. Here is seen the external ligament of the malleus, a flat, fibrous membrane of some width, stretched between the tympanic margin and the hammer; its antero-posterior dimension is at least three millimètres at the marginal insertion, and it diminishes at its malleal attachment to the lowest part of the external surface of the head. It is at the same level as the osseous ridge already described, and is continuous with it.

There is thus a fibrous and osseous plane separating the attic from the tympanum in front. Internal to the malleus is the tendon of the tensor tympani, which after its reflection on the processus cochleariformis is directed outwards and forwards towards the malleus, to be inserted in some cases into the neck of the bone, in others into the handle below the short process. The tendon is distinctly conoid in shape, the slender summit corresponding to the malleus—the base, much thicker, to the spoon-shaped process. It is separated by an interval of about one millimètre from the above described osseous shelf.

The orifice of communication between the tympanum and the attic lies, therefore, in front of the tensor tendon, and is bounded *in front* by the horizontal osseous shelf; *behind* by the external ligament and head of the malleus, and by the tensor tendon; *externally* by the tympanic margin, and *internally* by the petrous bone. It measures scarcely a square millimètre in the normal adult ear, but it is often still further reduced by pathological fibrous bands.

REVIEWS.

Pritchard.—*Handbook of Diseases of the Ear*, for the use of Students and Practitioners. By Urban Pritchard, M.D., F.R.C.S. Lewis, London, 1891.

IT is a matter of immense and almost infinite difficulty to compress into a small book the essentials of even a very moderately extended science without sacrificing intelligibility to conciseness. This is certainly true of otology, and in such a work as the one before us we feel sure the student must often experience a desire for fuller explanations of the methods and processes described. The practitioner, who is already fairly familiar with the subject, will, however, find in the perusal of the little volume the means of reviewing rapidly and suggestively the whole of the science, for no subject is omitted although some are rather briefly, and therefore somewhat dogmatically, outlined. A good sketch is given of the elementary anatomy and physiology of the organs of hearing. We would, however, have liked a more practical account of the Eustachian tube, so that the learner might better visualize the position of the orifice, and the

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