LARYNX.

DONALDSON, Jun., FRANK.—Further Researches upon the Physiology of the Recurrent Laryngeal Nerve. *New York Med. Journ., August* 6, 1887.

THE author criticises Hooper's paper, insisting that he does not once allude to any *peripheral* effect of *ether* on the laryngeal muscles, and that Hooper's conclusion, that abduction was normal, provided consciousness was abolished, was unjustifiable. Donaldson avers that the stimulus 3, which Hooper says he used, will always give *adduction* of the cords, and that Hooper failed all along to see that he was dealing with a peripheral, and not a central effect. Donaldson affirms that his present experiments prove:—1. That an abduction of the vocal bands, a dilatation of the glottis, can be obtained without ether. 2. That opening or closing of the glottis depends upon the strength of the current. 3. That every statement made in his original paper is confirmed.

According to his experiments, abduction follows the use of weak, adduction of strong stimuli, in every case. The more irritable abductors also die first, and these are the muscles which respond to weak stimuli. The same is proved by Bowditch for the flexor and extensor muscles of the frog's leg. It is not, however, possible yet to say whether the difference in irritability lies in the muscles or nerves. The author now believes that those cases in which the vocal band is found fixed in phonatory position are true paralyses of the abductor muscle, and not spasm of the adductors, for in cases of unilateral or bilateral lesion of the cords from an aneurysm or tumour, the constant pressure upon the nerve acts as a mechanical stimulus to it, and the more irritable abductors are the first to respond (see p. 389).

HOOPER, F. H. (Boston).—**The Anatomy and Physiology of the Recurrent Laryngeal Nerves.** *New York Med. Journ., July* 9, 1887.

As far as dogs and cats are concerned, the recurrents are purely motor nerves, and stimulation with weak currents does not lead to a rise of blood-pressure, as is the case with other sensory nerves.

The author enters into an elaborate discussion of the anatomy and relations of the nerve, for which the original must be consulted. There are in the larynx three distinct functions controlled by three distinct groups of muscles, all innervated by the recurrent nerves, viz.:—1. Those that carry on the respiratory function of the larynx. 2. The sphincter group. 3. The phonatory group. The recurrent laryngeal, therefore, contains three sets of fibres presiding over these

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functions. Having no definite knowledge of the numerical or typographical relations between dilating and constricting fibres, we cannot be positive when we apply a current of electricity to the nerve, that we are stimulating all of its component fibres equally and simultaneously. We should expect the nerve fibres which regulate the action of the largest group of laryngeal muscles, viz., the respiratory, to be most numerous, sensitive, and resistant, and easiest called into action. But this is not universally the case. The cat is peculiar. Contrary to the dog, the earliest effect of a weak stimulus to the recurrent is to produce a tendency towards dilatation, merging into rigid dilatation as the strength of the stimulus is increased. While, in the cat, the function of the recurrent under normal conditions is to open the glottis, it is in the dog to close the glottis. The normal function of the recurrent nerve in man is therefore difficult to determine.

The general result of experiments made upon the human subject is to show that the recurrents close the glottis on stimulation. The effects observed in dogs and cats can be reversed under ether and profound morphine narcosis. The author refers to Donaldson's inability to obtain the "ether effect," and to Semon and Horsley's verification of his original statement. They obtained the effect only in cases where the animal was not deeply etherized. In certain stages of etherization, the effect varies with the intensity of the current, *i.e.*, abduction is produced by weak stimulus, and adduction by stronger currents. It is, however, impracticable to use strong stimuli in experimental laryngeal physiology. Fresh researches have been conducted by the author on forty-two dogs, comprising 300 recorded experiments. But little is added to the author's previous experiments upon the "ether effect." The facility with which dilatation is obtained depends upon the susceptibility of the dog to the drug, the intensity of the irritation, and the amount given. It differs in different dogs. In the majority complete dilatation may be elicited; in others, only the mixed movement is obtainable; in two dogs the effect has been negative, but closure took place with slight anæsthesia. The author then describes at length his method of experimenting, and gives details of the experiments. Perkins and Ellis, experimenting upon the sciatic of the frog, have found that stimulation under ether produced opposite effects from experiments without ether, and Professor Bowditch has concluded that the "ether effect" is a phenomenon dependent upon the action of the ether upon the nerve trunk due to paralysis of an elective character of certain nerve fibres.

Applying the same method to the recurrent nerve of the dog, viz.,

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local application of ether to the nerve, in chloralized animals Hooper was unable to obtain in any (of seven dogs) a dilatation. As the nerve became paralysed with the ether it required more powerful stimulus to produce contraction. The cause of the "ether effect" is not to be sought in the nerve trunks.

In cats, of course, no "ether effect" can be obtained, since abduction takes place equally well under chloral, morphine, chloroform, or ether. Dilatation of the glottis is the rule when recurrent or pneumogastric nerves are stimulated, or their peripheral ends after section. But after death the abductions grow more feeble, and closure more prominent. During asphyxia dilatation is invariably the case even when cyanosis is extreme and respirations have ceased. A closure can only be produced reflexly by stimulation of the central end of the cut vagus. The results were constant in twelve cats. (See p. 389.)

INGALS, E. F.—Intubation of the Larynx. *New York Med. Journ., July* 2, 1887.

THE author gives a historical survey of the subject, referring especially to Bouchut's original attempts, in 1858, to introduce intubation, and which was condemned at the time by Trousseau, and to O'Dwyer's experiments commenced in 1880. He has treated twelve cases of diphtheritic laryngitis by intubation. In the only three cases in which he had subsequent care of the patient, recovery followed. One lived for eight days, and died suddenly; another lived eight days and died of pneumonia. The author advises that (1) all foods should be prohibited except by enemata; (2) some preparation of mercury in large and frequent doses should be administered; (3) in case of the development of bronchitis or pneumonia, respiratory and cardiac stimulants should be given freely, but judiciously. The author has obtained reports of 514 cases, in 134 of which, or $26\frac{7}{100}$ per cent., recovery has followed. The following conclusions are arrived at from a study of these cases:—

1. Intubation may be quickly and easily performed, and with but little danger. 2. Friends readily consent. 3. There is no necessity for tedious after-treatment, as the tube is kept clear by the respiratory efforts. 4. The results are practically as good as tracheotomy at all ages, and apparently better in very young children. 5. Great care must be taken to prevent the entry of foreign substances into the trachea. 6. With O'Dwyer's tubes, deglutition of fluids should be forbidden while the tube is in the larynx. Ice and soft solids may be given; fluids, if necessary, may be given by enemata, or the tube may be removed while feeding, and re-introduced afterwards. 7. Tubes with smaller heads, designed to rest on the cords, have not been used

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sufficiently to entitle a positive opinion about them. If experience proves that they do not slip into the trachea, they will, however, obviate the difficulty of feeding the patient. 8. Medical treatment after intubation must be carefully attended to. 9. Long tubes are preferable to short tubes, as less liable to be filled with membrane. 10. Intubation may and should be practised early, and does not preclude subsequent tracheotomy. 11. For serious cases of spasmodic croup, and for œdema of the glottis, the procedure will prove most useful. 12. The same may be said for treatment of chronic laryngeal stenosis. (See p. 386.)

SAJOUS, C. E. (Philadelphia).—**A Study of the Principal Objectionable Features of Intubation.** *New York Med. Journ, July* 23, 1887.

INTUBATION is encumbered with some real defects, which will doubtless be remedied as the method grows in use. The principal objections are :—

1. Obstruction of the tube by fragments of membrane.

2. Crowding down of loose membrane during introduction of the tube.

3. Passage of food through the tube into the trachea, and consequent inability to feed through the mouth.

4. Momentary arrest of respiration during introduction and consequent shock.

5. Liability of the tube to be coughed out, and slipping of the tube into the trachea.

The first defect is caused by (1) limited diameter of the interior of the tube ; (2) its internal conformation. The second accident is caused principally by the length of the tube. The third defect, the author thinks, is not due to the impediment offered to the free action of the epiglottis, by the presence of the tube, but to the weight of the tube preventing the ascent of the larynx. The fourth accident is due to the presence of the obturator. The fifth accident is due to the small diameter of the tube, rendering it liable to be coughed out of the larynx like a foreign body. Slipping of the tube into the trachea is due to the narrowness of the head, combined with the weight of the tube. The author has therefore devised a set of tubes which, when *in situ* in the larynx, present the shape of the capital letter A with a funnel at the top. He has also devised forceps, and an instrument for the purpose of withdrawing detached membrane from the trachea. So far the author has only used the tubes upon the cadaver. (See p. 386.)

SOLIS-COHEN, J.—The Treatment of Laryngitis in Professionals who are unable to rest. *Medical News, June* 18, 1887.

IN order to restore the voice of a professional who comes with hoarse-

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ness, the result of acute laryngitis, the author finds the best method is to give a sharp emetic, then let the patient rest until the time of the performance sucking ice, and keeping a cold compress to the neck. For chronic laryngitis he had found a weak solution of sulphate of zinc (two grains to the ounce) in spray the most useful. In the intervals of the play the performer may inhale a little compound tincture of benzoin, if he finds himself somewhat hoarse. Another remedy of considerable service is the use of a respiratory with turpentine, terebene, eucalyptol, or similar medicaments. He sometimes directs the patient to sprinkle a little turpentine on the bedroom floor, but is not aware of any special method adapted to this class of individuals. (See p. 392.)

GRÜNWALD (München).—**Combination of Syphilis and Tuberculosis in the Larynx.** *Münchener Med. Wochenschr.*, Nos. 21, 22, 1887.

THE author relates, in a very detailed and careful manner, the individual signs of tuberculous and syphilitic affections of the larynx, communicates some illustrative cases, and concludes in the following manner:—If we find in a larynx evidently contracting cicatrices and along with progressive destruction, especially on the outside of the epiglottis, and we also find papillary tumours on the interarytenoid space which are actively growing or recurrent after operation, we can be sure that there is a combination of syphilis and tuberculosis.

MICHAEL.

ASCH, MORRIS J.—A Case of Stenosis of the Larynx, Treated by Divulsion and Systematic Dilatation. *Med. News, June* 25, 1887.

THE patient was a young woman of twenty-seven, with a history of pulmonary trouble but no other condition. There was wheezing cough and dyspnœa, increased by lying down. There was nothing abnormal in the larynx or above the cords. Two white swellings, united by a membrane posteriorly, were, however, seen below the cords; the opening of the larynx was diminished to one-third of the normal size. The membrane was cut and divulsion performed, causing great improvement. Being much better she ceased attendance. A few months after she returned with the dyspnœa as great as before, the result of acute laryngitis. The introduction of O'Dwyer's tubes produced spasm and cough. Schroetter's hard rubber tubes were then used, and within three months the cure was perfect, and all symptoms have now disappeared. (See p. 395.)

BEAN, C. E. (St. Paul).—**A Case of Recurring Hæmorrhage of the Vocal Cord.** *New York Med. Journ., Sept.* 24, 1887.

THE patient was under treatment for chronic hypertrophic rhinitis, follicular pharyngitis, and superficial inflammation of both cords, and discharged relieved in three months. He returned with inflam-

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mation of the vocal cords, and was again cured. Two months later he returned with the same complaints, having had to use his voice more than usual, and had constant coughing for a day from inhalation of dust. The left vocal cord was normal, the right one swollen and dark red. The cure was effected in two months with zinc sulphate (lx. gr. ad ℥j.), and nitrate of silver (xxx. – lx. gr. ad ℥j.). Three months later the condition recurred. Zinc, as before, cured the condition in a month. Five months after, all the symptoms had recurred. The right cord was again of dull red colour. Ergot (½ gr. t. d.) was given, without local application, and in three weeks the cords became normal.

There was no lung trouble whatever. (See p. 397.)

MAJOR, G. W.—Affections of the Crico-arytenoid Articulation. *New York Med. Journ., Sept.* 24, 1887.

THE principal affections alluded to by the author are—sprain, dislocation, direct local injury, acute inflammation, and ankylosis. Sprain may result from sudden closure of the larynx during forced swallowing. Dislocation is rare, more particularly as the result of direct violence. The author cites a case in which it was due to pressure on the cricoid cartilage, and a second case in which, owing to immobility of the left vocal cord, a rough but useful voice is produced by approximation of the right vocal cord and ventricular band of the left side. Acute inflammation of the joint is met with in rheumatic and gouty attacks, tonsillitis, measles, scarlatina, croup, bronchitis, and other acute disorders. Ankylosis of the joint is the affection most commonly met with. Its causes are numerous, *e.g.*, chondritis or perichondritis (primary or by extension), syphilis, typhoid, rheumatism, gout, exanthemata, and catarrhal conditions of the air-passages. The most common cause is rheumatic or catarrhal inflammation of the joint. Every possible degree of ankylosis may exist, from barely perceptible impairment of movement to absolute immobility. The most important influence is exerted by the point at which ankylosis is accomplished, as regulating respiration and phonation. The symptoms, which closely resemble those due to paralysis, are then discussed. The differentiation is important. Tenderness on pressure over the crico-arytenoid region, possibly some enlargement of the joint capable of being felt externally, swelling or enlargement as seen by the laryngoscope, the sensation of roughness to palpation, or friction sound assist the diagnosis of ankylosis. The absence of these signs favours paralysis. Difficult deglutition is characteristic of many cases of marked ankylosis. The treatment consists in frictions of biniodide of mercury over the crico-arytenoid region, the local use of astringents or weak solution of iodine in

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glycerine, iodide of potassium, and galvanism. Massage is also beneficial. (See p. 397.)

ARCHAMBAULT.—Fifty Centime-piece in the Larynx. (From Dr. Fauvel's Clinic.) *Gaz. des Hôp., August* 25, 1887.

THE patient, a coachman, came to Dr. Fauvel on June 9, having swallowed the coin two days before. He was extremely pallid, and exhibited the greatest anxiety. The neck was very sensitive to palpation, and the slightest pressure at the level of the thyroid and cricoid cartilages produced great pain. Violent attacks of suffocation occurred, dyspnœa was extreme, and it was impossible to take the least nourishment, deglutition provoking intense pain. Attacks of cough were frequent and very painful, and aphonia was complete.

The fifty-centime piece was found laryngoscopically to be situated in the ventricles, the inferior aspect reposing upon the vocal cords, and between the posterior edge and the interarytenoid region was a space of two to three millimetres. Various efforts at extraction with the forceps being unavailing, the intra crico-thyroid space was opened, the thyroid cartilage incised up to the level of the vocal cords, the coin was seized with forceps and drawn out. Twenty days after, the wound had completely cicatrized, the patient was cured, and the voice was normal. JOAL.

JOHNSON, H. A. (Chicago).—**Cancer of the Larynx.** *New York Med. Journ., Sept.* 24, 1887.

THE relation of five cases, from which the author draws the following conclusions :—

1. All the five patients were males, the youngest forty-five years old.
2. The growth was from the right side in three cases, from the left in one, and probably in the other.
3. In only one case was there a family history of cancer (viz., the patient's mother).
4. In one case the disease seemed to be secondary to extension from outside.
5. In only one case was there any evidence of infection of the lymphatics from the larynx.
6. In only one case was there any troublesome hæmorrhage.
7. In no case was there marked pain in the larynx.
8. In three cases, tracheotomy was performed, and the patients' lives prolonged, three, five, and eight months respectively. (See p. 397).

CHAPMAN, S. H. (New Haven).—**Myalgia of the Pharynx and Larynx.** *New York Med. Journ., August* 27, 1887.

CHAPMAN specially limits the use of the word to a certain painful condition of the muscles, produced by inhalation of impure air. In

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the initial stage there is a sense of uneasiness; this does not amount to pain even on motion, but on pressure gives decided pain: in the former it differs from muscular rheumatism.

The second important symptom is a sense of loss of power in the affected part. This is specially noticed when the affection is unilateral in the muscles of the chest, or the muscles of deglutition. He concludes that the pressure of solids in the act of swallowing gives rise to the pain, and that the difficulty of swallowing vanishes under the use of fluids.

Usually the sensation of uneasiness and loss of power is denoted by a suppressed vocal intonation.

The third symptom is an irritable pulse, increasing to cardiac palpitation in cases of long standing or of severity.

The fourth symptom is tenderness, more or less marked, in the region of the spleen.

He locates its nature and cause by tracing its origin to malarial atmosphere, and its cure to anti-malarial germicide treatment.

He gives four cases from his note-book substantiating his theory and practice. (See p. 389.)

GLASGOW, W. C. (St. Louis).—**The Etiology and Mechanism of Asthma.** *Am. Journal of the Med. Sciences, July*, 1887.

In 1885, Glasgow described a condition of the nasal mucous membrane characterized by extreme pallor, swelling, and œdema. When irritated, the swelling is increased and a thin watery discharge is poured out. The condition promptly subsides, after the inhalation of amyl nitrite, ether, or the instillation of morphia and atropia, but remains unchanged after the application of cocaine. The subjects are of a marked neuro-vascular temperament, and the condition of the mucous membrane differs from that ordinarily encountered in coryza vasomotoria. In the latter condition there is hyperæmia, with dilatation of the vessels, but in the former the pallor completely negatives the idea of dilatation. The action of the above drugs indicates rather a spasm of the arterioles, and Glasgow assumes that the condition is one of vasomotor spasm. He believes that an analogous condition may exist in the mucous membrane of the bronchi during asthmatic attacks. This theory derives support from the observation that examination with the mirror during the asthmatic paroxysm reveals often a pallid and swollen condition of the pharyngo-tracheal membrane. He would, then, consider asthma a disorder of vascular irritability; that the paroxysm is directly due to a partial occlusion or cylindrical narrowing of the lumen of the bronchi through the swelling of the bronchial membrane; that this swelling is caused by a vasomotor spasm of the arterioles with a

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saturation of the tissues by the liquor sanguinis : this condition is accompanied by a general high blood pressure. The author devotes considerable space to the description of the asthmatic paroxysm, and prefaces his article with a brief *résumé* of recent theories on the subject. JOHN N. MACKENZIE.

NECK, &c.

DEBOVE.—Exophthalmic Goître and Hysteria. *Soc. Méd. des Hôpitaux, August* 12, 1887.

THE author cites the case of an hysterical man, in whom, some time after the access of nervous symptoms, all the signs of exophthalmic goitre appeared. It was of the undeveloped variety, but was none the less evident. The thyroid was not enlarged certainly, but was painful to pressure, exophthalmus was very manifest, and the cardiac pulsations were rapid, amounting to 120 to 140 a minute. The author has observed in women a large number of cases in which hysteria and goitre were simultaneous. In men, however, the coincidence is rare. JOAL.

CARDONE, F.—Hypertrophy of the Thyroid Gland concurrently with Atrophy of the Spleen. *Arch. Ital. di Laring.*, 1887.

CARDONE relates two observations—(1) A woman with degeneration of the spleen, the result of *malaria* ; (2) a woman with a voluminous tumour of the spleen. In both cases occurred, concurrently, an enlargement of the thyroid gland. The author, after having shortly discussed the functions of the thyroid gland (and he relates observations and experiments made latterly), is of opinion that there is a physiological relation between thyroid gland and spleen, and that the enlargement of the former, observed by him in the cases related, was to be considered as a compensative hypertrophy. He, however, does not deny that the experimental proof is wanting. He has the intention of undertaking this, since it will answer, in a certain manner, the important question raised by these observations. MASSEI.

PARTRIDGE (Carlisle).—**Tumour of the Right Parotid Gland.** *Edin. Med. Journal, June*, 1887.

EXHIBITION of patient (a three months' old infant) before the Carlisle Medical Society, 10th March, 1887. HUNTER MACKENZIE.

McGILL, A. F. (Leeds.)—**Remarks on Four Cases of Excision of the Tongue.** *Edin. Med. Journal, August*, 1887.

THESE cases are recorded to "illustrate the advantage that is gained by the performance of a preliminary laryngotomy, and the recovery which follows excision by means of the scissors."

HUNTER MACKENZIE.

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