ASSOCIATION MEETINGS.

American Laryngological Association.

Tenth Annual Congress, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, *and* 20, 1888.

President, Dr. RUFUS P. LINCOLN, of New York.

A Decade of Laryngology was the subject of the address by the PRESIDENT, who said that the members of the association were to be congratulated upon the successful termination of ten years of their labours. The association presented now every evidence of healthy and vigorous growth, and gave promise of long life. Its objects were, in brief, that the association should become the means of mutual introduction of those of kindred tastes in the practice of medicine, and of fostering friendships thereby made; that it should have annual meetings for the contribution and promulgation of original work, and for the discussion of subjects pertaining to laryngology; that its proceedings should be published in a suitable form for convenience of its members, and offered to the profession at large; that it should institute a laryngological library; that prizes should be offered for valuable contributions to the science of laryngology; that special hospitals, or wards in hospitals already established, should be devoted to throat patients; and that its members should seek recognition in the different medical colleges throughout the country by the assignment of a special chair for instruction in this department. Except the offering of a prize, all these requirements had been realized. The organization of the association had marked the beginning of a new era in laryngology. Analysing the original contributions read at the previous meetings (omitting presidential addresses), the speaker found that there had been 194 scientific papers, which might be classified as follows: (1) Anterior nares: 18 were upon diseases of mucous membrane and submucous tissue, 5 on tumours, 10 on deformities, 9 on neuroses, and 2 on the cavity of the antrum. (2) Of the naso-pharynx, 5 referred to disease of the mucous membranes and submucous tissues, 7 to tumours, and 3 to deformities. (3) Of the oro-pharynx, 18 referred to diseases of mucous membrane and submucous tissue, 6 to tumours, 2 to deformities, 6 to neuroses, and 1 was anatomical. (4) Of the larynx, 20 papers were on mucous and submucous tissue, 18 on tumours, 6 on stricture of larynx and trachea, 4 on diseases of cartilages, 18 on diseases of the nerves, 3 on fractures and wounds, 8 on anatomy and physiology, 5 on therapeutics, 2 on syphilis, 4 on vocalization, 3 on intubation and tracheotomy, 1 on foreign bodies, 1 on laryngectomy, 4 on photography, and 5 general. There had also been exhibited more than fifty new instruments, or modifications of old ones. Many papers had been illustrated by sketches, photographs, pathological specimens, or microscopical exhibitions, or accompanied by living patients. These contributions had been sought after by medical journals, and had been published in the annual volume of transactions. An attempt to disparage the specialist, or rather to criticise his relation to the patient and the family physician, at present could be met by pointing to the work done by this association, and the reply could be made that if there was a want of harmony it must be the fault of the individual rather than of the principle. The more strictly one was a specialist and the less a general practitioner "with a preference," the less chance there would be for discord between the expert and the family physician. The patient was no longer regarded as the private property of one physician. The principle of the sub-division of labour was permeating all classes of effort, while in the profession,

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in addition to these principles, the old and new code were being merged into the Golden Rule. In conclusion, the speaker referred to the growing interest in preventive medicine, and called attention to the field which this opened to the prevention of diseases of the air-passages.

Imaginary Laryngeal Ulceration.—By Dr. GEORGE M. LEFFERTS, of New York. In the condition referred to the patient complained of pain affecting a portion of the tongue, giving rise to the belief that he was suffering with ulcer. Although no ulceration could be detected, even on careful examination, yet the sensation was real. Since the cause was unknown and routine treatment unsatisfactory, the subject invited our consideration. The condition had been given its name by Verneuil. The clinical appearances were usually as follows: A patient —male or female, for the affection occurred with equal frequency in the sexes, and at from thirty-five to fifty years of age—presented himself, complaining of intense pain, usually of a lancinating or darting character, limited to one half of the tongue, usually the left, and extending from its base, just opposite and below the tonsil, forward to its tip. Or the pain might be more circumscribed, and limited to the junction of the posterior with the middle third of the organ, at or near the location of the posterior lenticular papillæ. It was more or less intermittent, rarely constant; was aggravated by movements of the tongue, although these were free; was often increased by the act of mastication, and excited by hot or irritating articles of food. The patient was in fear of cancer, became demoralized, and could not be convinced that ulceration did not exist. Such patients were not invariably hypochondriacal, as had been asserted. On the contrary, the affection was met with in those who presented no evidence of a neurotic or even nervous temperament; it was occasionally seen in individuals possessing and presenting all the signs of robust health, and the mistake had been made, and was made to-day, of ascribing alone to the imaginative fears of the patient what actually existed as an undoubted, if not always demonstrable, physical and painful fact. The tongue, on examination, presented a normal appearance, unless, through injudicious applications or from other causes, there was some irritation indicated by enlargement of the papillæ, and the tongue became more or less swollen. Verneuil and, it was believed, Labbé considered this affection as purely neuralgic. Fournier, Lollé, Hardy, Luys, and Magitot regarded the symptoms as hypochondriacal. Poyet said that the delusion might be referred to one of four causes: (1) Neuralgia of the tongue; (2) imagination, leading the patient to suspect cancer; (3) hypochondria; and (4) lingual psoriasis. Cases were certainly met with which could not be ascribed to any of these causes, and where all local irritation had been removed—such as from decayed teeth, teeth filled with amalgam, or disease of the gums. The general or local cause was unknown. Injudicious routine treatment by local applications was not only unavailing, but often aggravated the condition. Nothing was uniformly successful. Applications of cocaine or aconite sometimes succeeded, but often failed, and the same was true of the various treatments usually employed for neuralgia. Electricity was of service. Hypodermic injections of analgesic drugs had been recommended, and even the galvano-cautery. Neurotomy must be discarded, mainly because of the impossibility of proving whether the lingual or the glosso-pharyngeal nerve was at fault. The object of this paper was simply to place this rare and curious affection in its true light, and bring up the question of treatment.

Dr. E. FLETCHER INGALS, of Chicago, had found rheumatism present in some cases, which had only yielded to the usual treatment for this condition. In other cases neuralgia seemed to be the cause. He mentioned a case in a man who had been shot through the chest, and who had not improved under treatment. In other cases it seemed to resemble the sore mouth occurring as a result of the tobacco

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habit, which disappeared when the habit was broken. Some patients were benefited by the use of tobacco.

The PRESIDENT observed that he had met with cases associated with rheumatism, but in which this had not explained the cause. In one case the general condition had been amenable to treatment, while the local pain in the tongue had not been benefited by it.

Dr. LEFFERTS, in conclusion, said that the suggestion of rheumatism was good and applied to some cases. Many of the patients, however, were in robust health, with no suspicion of rheumatism. In regard to tobacco, many of the patients were women. The question of treatment was the special object of the paper.

Dr. EDGAR HOLDEN, of Newark, had treated six cases on the assumption that they were of rheumatic or gouty character. Three were treated successfully—two with arsenic, and one with lithia water.

A Case of Subglottic Chronic Stenosis of the Larynx treated by Dilatation.—Dr. FRANK DONALDSON, of Baltimore, reported the history of a case. The patient, a woman thirty-four years of age, presented, in October, 1887, a condition of subglottic stenosis, probably due to diphtheritic inflammation and subsequent cicatrization and contraction by membranous bands. Schroetter's long hard-rubber perforated tubes were used, commencing with No. 1 and gradually going up to No. 5, having first touched the larynx with a 15 per cent. solution of cocaine. Subsequently there had been some difficulty of breathing after a catarrhal attack, and it was possible that there might be some return of the obstructing membrane. Otherwise the relief had been complete.

Stenosis of the Larynx and Trachea.—Dr. CARL SEILER, of Philadelphia, reported a case, the peculiar points of which were, first, the fact that the patient, a small boy, had learned to articulate audibly without any air passing through the larynx. He produced the articulate sounds by filling the oral and pharyngeal cavities with air, and then, by a rapid contraction of the pharyngeal constrictors, forced it forward past the natural obstructions, thus making the consonant sounds. The second point was the peculiar features of the operation undertaken for the relief of the stenosis. This consisted of an external incision through the two upper tracheal rings and the cricoid cartilage. The operator's finger was then introduced through the mouth into the larynx, and, pushing the tumour causing the stenosis downward, it was removed from below with a forceps through the external wound. The stricture of the trachea was situated lower down, just above the old tracheal wound, and was due to ulceration, which had followed the original tracheotomy performed two years prior to the laryngotomy. This reduced the lumen of the trachea to about one-third of an inch. The method pursued for curing it was simply to take the cannula out of the old wound and introduce it into the upper wound and through the stricture. At the end of a month the tube was removed, no obstruction to breathing was experienced by the patient, and he soon learned to use his voice like other children.

Syphilitic Stenosis of the Trachea.—Dr. JOHN N. MACKENZIE, of Baltimore, reported the history of a case.

Stricture of the Larynx with extensive Cicatrization from a Case of Ulcerative Tuberculosis.—Dr. J. SOLIS-COHEN, of Philadelphia, presented an interesting specimen showing this condition.

Dr. DELAVAN, Dr. RICE, Dr. INGALS, Dr. LEFFERTS, and Dr. COHEN discussed the preceding papers. It was asserted that O'Dwyer's tubes were valuable accessories to the treatment of laryngeal stenosis. In cases where there was extensive cicatricial constriction any treatment would be only palliative; where the constriction was narrow and membranous, dilatation or cutting might

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entirely relieve the patient. Where the stenosis was caused by adhesions between the arytenoids, Dr. Cohen pointed out that laryngeal dilatation would never afford permanent relief.

An Instrument for opening the Larynx without previous Incision of the Skin was presented by Dr. EDGAR A. HOLDEN, which was offered as a possible substitute for tracheotomy and intubation in certain cases.

The paper was discussed by Dr. DALY, Dr. SEILER, Dr. COHEN, Dr. LANGMAID, Dr. LEFFERTS, Dr. BOSWORTH, and Dr. HOLDEN. Some minor modifications were suggested in the instrument, which otherwise was favourably received. The proposed operation was hailed as a valuable contribution to laryngology.

Two Cases of Interest in the Clinic of Laryngology at the Lariboisière Hospital.—A paper contributed by Dr. A. GOUGENHEIM, of Paris. The first case was one of cancer of the larynx in a workman fifty-six years of age, upon whom tracheotomy had been performed in 1887. Owing to extension of the disease to the wound and down the trachea, it was necessary to have a longer tube, the lower portion of which should be flexible. This was accomplished by Mathieu, of Paris, by making the lower portion of the inner tube in spiral section and movable. A rubber bougie was used to introduce the outer cannula. In spite of the irregularities of the passage, the instrument was easily introduced, and answered the purpose for which it was designed. One notable feature was that the instrument always remained ***in situ*** when the strings which fastened it round the neck were unloosened, thus differing from ordinary cannulæ. The instrument was made of silver.

The second case was one of buccal perforation opening into the maxillary antrum in a workwoman thirty years of age. This was due to necrosis, the result of syphilis.

A communication from Dr. E. J. MOURE, of Bordeaux, France, on ***Acute Œdema of the Sub-epiglottic Region and Lower Pharynx in a Diabetic Patient*** was likewise read.

A paper on *Parasites Inhabiting the Human Nares*, by Dr. D. N. RANKIN, of Alleghany City, Pa., was read by Dr. C. H. Knight, of New York, in the absence of the author.

Election of New Members.—At the close of the morning hour an executive session was held, at which the following members were elected: Dr. S. Oakley Vander Poel, of New York; Dr. F. Whitehill Hinkel, of Buffalo; and Dr. John H. Lowman, of Cleveland, Ohio. There being still one vacancy, it was voted not to adopt the amendment increasing the limit of membership. Dr. J. Solis-Cohen gave notice that he would offer the same amendment at the next meeting.

Dr. CLINTON WAGNER, of New York, presented a paper on ***Residence at certain High Altitudes as a means of Cure for Laryngeal Phthisis.*** He called attention to the fact that 33 per cent. of all cases of pulmonary consumption are in addition laryngeal, and proceeded to the discussion of the relative advantages of high altitudes, as represented by Davos-Platz and Colorado Springs, and lower altitudes, where the atmosphere is moist and warm. The objections to a high altitude depend upon the dryness of the air and the rapid atmospheric changes, but this may be overcome by instructing the patient to breathe through his nose, and by great care to avoid exposure. Dr. Wagner believes that laryngeal phthisis is invariably secondary. He also reported four cases of this disease cured at Colorado Springs, but believes that climatological changes are of no value in this affection, provided the condition has passed from that of induration into ulceration. In the winter-time such patients in high climates should retire at sundown from the outside air.

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Dr. W. C. GLASGOW, of St. Louis, had observed that whenever a consumptive had a throat complication a stay in a high elevation had been injurious. When the throat complication was marked, he recommended a stay in a lesser altitude (say 3000 feet) until this had been relieved before going to the greater altitude (say 5000 to 7000 feet). He did not regard all cases of throat complication in phthisis as being cases of laryngeal phthisis; he did not believe that true tubercular ulceration of the larynx would get well in any climate.

Dr. E. L. SHURLY, of Detroit, confirmed the last observation, and spoke of the difficulty of diagnosis. The discovery of the *Bacillus tuberculosis* had not given the assistance that was hoped, as it might be present in chronic bronchitis and might not be found in well-marked instances of phthisis pulmonalis. He had seen better results following a visit to the sea-shore in some cases than from sending them to the mountains. Each case must be studied by itself.

Dr. LEFFERTS confirmed the statement that there were two kinds of laryngeal ulceration—one due to lowered vitality, the other to tuberculosis; the latter never healed, and in such cases the patient was much better off at home than elsewhere.

A Hitherto Undescribed Neurosis of the Aural Apparatus closely allied to Coryza Sympathetica.—By Dr. JOHN N. MACKENZIE, of Baltimore. In the course of a former article on "Respiratory Vaso-Motor Neuroses" he had called attention to a condition of the aural apparatus closely akin to vaso-motor coryza. He now reported an illustrative case: A lady, aged forty-two, married, had had a peculiar periodic affection of the ear, coming on every summer. She had been reduced in circumstances, thus suffering much nervous strain, though certainly not hysterical. The affection made its appearance suddenly. It recurred about the first day of June each year. Intolerable itching of the auditory canal and corresponding side of the throat was soon followed by swelling of the lining membrane along the auditory canal, until the meatus became completely occluded; the surface of the swollen membrane was intensely sensitive, preventing the employment of topical applications except hot water. This was followed by middle ear inflammation and occlusion of the Eustachian tube. The affection was limited to one side in each attack, although the recurrence usually involved the ear which had escaped the preceding year. The paroxysms of the disease were of almost daily appearance for four weeks, when they disappeared suddenly. During last summer, spent at a "hay-fever resort," she escaped the malady for the first time in twenty-two years.

The case was interesting because it represented a hitherto unrecognized and undescribed affection of the ear, and because it furnishes additional evidence in favour of the doctrine maintained by the author concerning the rôle of the sympathetic in the so-called motor and neuro-vascular affections of the upper respiratory tract, and as a pregnant illustration of the law that "the area in which the vaso-motor reflexes occur will depend, other things being equal, on the seat of the local pathological process, or the localization of the area of peripheral excitability." In this case the process was in the neighbourhood controlled by the otic ganglion. while in the ordinary form of conjunctival and nasal affection, the vaso motor supply was obtained through the ophthalmic. If these affections were closely studied we might gain some light upon the pathology of the sympathetic nerves.

Dr. SHURLY, Dr. SAJOUS, Dr. ALLEN, and Dr. MACKENZIE discussed this communication.

Dr. BRYSON DELAVAN followed with a paper entitled *Further Investigations as to the Existence of a Cortical Motor Centre for the Human Larynx*, and referred to a paper read by him during the Eighth International Medical Congress at Copenhagen. He believes that this centre exists in the region of Broca's third convolu-

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tion, and cited the opinions of Landois and Garel, which supported this view. Garel saw a case of laryngeal palsy, with a lesion in this neighbourhood; but in a case examined by Dr. Delavan no cortical lesion could be found on macroscopical examination except marked atheroma of the bloodvessels. Microscopical examination of the specimen is in progress.

Internal Œsophagotomy, with Report of Successful Cases.—Dr. JOHN O. ROE, of Rochester, N. Y., read a paper on the subject. In case of cicatricial constriction of the œsophagus, the author considered it safer to make several linear incisions two millimètres in depth in the constriction before attempting dilatation than to attempt dilatation without it. When the cicatrix was horseshoe shaped and did not include the entire circumference of the œsophagus, attempts to force a probang through the constriction might produce rupture of the healthy portion. The preferable plan was to make incisions on each side and at the back before attempting dilatation.

Among those taking part in the discussion were Drs. Rice, of New York; Ingals, of Chicago; Langmaid, of Boston; Sajous, of Philadelphia; and Delavan, of New York. Dr. Rice advocated cocaine previous to the introduction of the œsophageal bougie. Dr. Sajous thought this dangerous, because the anæsthesia prevented the patient from aiding in the direction of the instrument, and eliminated the useful symptom of pain. If a softened area existed near the growth, it was readily punctured under such circumstances.

Dyspepsia as reflected in the Mucous Membrane of the Upper Air Passages.—Dr. BEVERLEY ROBINSON, of New York, by appointment, opened the discussion upon this subject, and in the course of his remarks cited a number of cases in which digestive disturbances were accompanied by disorders of the upper air-passages, and others in which local affections of the naso-pharynx and larynx disappeared when the condition of the digestion or diet was corrected.

Dr. SHURLY did not accept the statement that naso-pharyngeal disease caused dyspepsia, because many cases were entirely free from gastric symptoms, but he did believe that dyspepsia, plethora, and sedentary habits of life were frequent causes of naso-pharyngeal catarrh.

Dr. W. H. DALY, of Pittsburgh, had had much experience in the use of general constitutional remedies, such as strychnine and calomel, in treating nasal disorders, and indorsed the remarks of the previous speaker with reference to the necessity of correcting the patient's habits of life.

Dr. ROBINSON closed the discussion with the remark that it was important for every specialist to occasionally have his work criticised from the standpoint of the general practitioner, in order to prevent him from becoming too exclusively devoted to special methods of treatment.

The Anatomy of the Nasal Chambers.—Dr. HARRISON ALLEN, of Philadelphia, made a highly valuable communication on this subject, and illustrated his remarks by exhibiting skulls and wet specimens of the human head in section.

Dr. FRANK BAKER, of Washington, remarked that it was possible that the facts noted by Dr. Allen as to the occurrence of irregularities and deviations within the region anterior to a vertical plane passing through the anterior ethmoidal foramina might have a morphological significance. That region was formed by the orbito-nasal process of the embryonic cranium, and was at first a cartilaginous capsule of considerable relative size, the different sinuses—maxillary, frontal, ethmoidal—being formed by vesiculation and absorption. It was a region of peculiar physiological action in this respect. It would seem probable that, on further examination, it would not be limited by a plane as arbitrarily drawn as the one suggested by Dr. Allen.

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Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by means of the Surgical Drill. By Dr. WILLIAM C. JARVIS, of New York.—The case was one of a man with a distinct specific history producing very severe nasal symptoms accompanied by caries of the bone, and preceded by the complete destruction of the mucous membrane covering the parts. Pain was excessive and so constant that the patient had to be kept constantly under the influence of anodynes. There was also much headache, tinnitus aurium, with hyperæsthesia of the scalp. The secretion was excessively fœtid, and life to the patient was a misery. There was great emaciation, weakness, and inability to perform any of the ordinary business of life. The treatment consisted first in the administration of anodynes, morphia to relieve the pain, the use of large doses of odide of potash, and the disinfection of the nasal chambers by the thorough circulation through them of antiseptic solutions. Notwithstanding these precautions, meningitis developed, and the case became serious. The amount of the iodide was increased from 20 to 60 grains three times a day. This was continued for some time, the man rapidly improved, and soon recovered sufficiently to permit of operative procedures directed toward the alleviation of the local disease. This was accomplished by the employment of a special surgical drill, by means of which the dead bone was removed.

The Treatment of Atrophic Rhinitis by the Galvanic Current.—Dr. J. H. HARTMAN, of Baltimore, reported successful results from this method.

A Photographic Study of the Laryngeal Image during the formation of Registers in the Singing Voice.—Dr. THOMAS R. FRENCH, of Brooklyn, N.Y., read a paper with this title, using the calcium light to exhibit the photographs upon the screen. The exhibition was a very fine one, and, although in the discussion which followed the lecture there was some want of agreement as to what constituted a register and the functions of the larynx in forming it, there was only one opinion as to the value of Dr. French's work.

Congenital Bony Occlusion of the Posterior Nares in a Child, relieved by the Surgical Drill.—Dr. CHARLES H. KNIGHT, of New York, gave a full bibliography of this subject, and reported an interesting case, a feature of which consisted in the fact that the operation afforded an opportunity for the development of the latent olfactory sense.

Dr. CLARENCE C. RICE, of New York, read a paper upon *Antiseptic Nasal Surgery.* He had come to discard tampons of antiseptic material, and the insufflation of antiseptics in powder, and relied chiefly on solutions, to be used by the patient in spray, from an atomizer. He conducted his operations under antiseptic precautions, and believed that he had obtained more speedy healing of tissues and freedom from untoward results in this way. He rarely had seen troublesome hæmorrhage, but this was probably because he operated, removing rather less tissue than many. He usually kept his patient in his office for some time after operation; a cotton plug was inserted into the nostril, to cause coagulation which would extend to the point of operation and check bleeding; the application of cotton directly to denuded tissues he did not favour.

Dr. HARRISON ALLEN, of Philadelphia, employed antiseptic precautions in nasal surgery, but had not observed any marked improvement in his results.

Dr. CHARLES E. SAJOUS, of Philadelphia, had two cases in his practice before he employed antiseptics which were apparently septic infection; since employing antiseptics he has had no trouble.

Dr. FRANK DONALDSON, of Baltimore, thought carbolic acid the best agent for promoting the healing of tissues after nasal operations.

Dr. E. FLETCHER INGALS, of Chicago, prefers carbolic acid in about four per

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cent. solution. After operating he insufflates boric acid and iodoform into the nostril; to control hæmorrhage he plugs the nose with strips of bichloride gauze soaked in a syrupy liquid composed of gallic, tannic, and carbolic acids, in glycerine; this plug he allows to remain from twelve to fifteen hours.

The Treatment of some Forms of Chronic Laryngitis.—Dr. CHARLES E. SAJOUS, of Philadelphia, read a paper in which remarkable results were reported from touching the thickened vocal cords by means of a protected applicator slightly coated with chromic acid. He had found cocaine objectionable in these cases, since its prolonged use led to increase of secretions from the mucous membrane. Cases were reported of complete restoration of voice under the treatment indicated.

The Cure of the Falsetto Voice.—Dr. J. C. MULHALL, of St. Louis, read a communication on this subject. The paucity of literature upon the subject had led to the presentation of this paper, which contained notes of several cases in which a falsetto voice was restored to the normal by voice-training and instruction in elocution. Dr. J. SOLIS-COHEN, Dr. JARVIS, Dr. GLASGOW, Dr. LANGMAID, Dr. DELAVAN, Dr. LINCOLN, and Dr. KNIGHT discussed the paper, the conclusion being that whereas some cases had been encountered which were considered intractable by some, others had been successful in curing all cases by teaching the patient the proper register for his voice and by vocal drill.

Subglottic Laryngeal Enchondroma.—Dr. E. FLETCHER INGALS, of Chicago, reported a case.

Laryngeal Papilloma from the Body of a Child.—Dr. S. W. LANGMAID presented a specimen. It almost identically repeated the case which was shown by an illustration in the well-known work of Causit, published in 1867.

Angioma of the Larynx.—Dr. W. C. GLASGOW, of St. Louis, reported a case. Coloured drawings of the appearance of the growth *in situ* and in section were presented. Attention was called to the peculiar translucent appearance of the growth, through which the cord could be clearly seen.

This communication was discussed by Dr. J. SOLIS-COHEN, who spoke of four cases that he had published.

Primary Sarcoma of the Tonsil.—Dr. ALEXANDER MACCOY, of Philadelphia, reported the history of a case. The rarity of reports of this affection was noteworthy, although the last two years showed a number of cases, which was probably to be explained by an increasing number of observers and by improved methods of study. To this paper was appended an epitome of cases recorded, so far as accessible to the writer.

In this case prompt surgical interference was not instituted, because (1) of the rarity of the case and want of a clear diagnosis; (2) the early symptoms being like simple tonsillar inflammation, preventing diagnosis, which was still more interfered with by absence of the patient from the city; (3) a tardy report from the microscopist, to whom a part of the tissue removed had been referred for examination.

Donovan's solution was administered in rather large doses (14 drops three times a day) for a number of months, without gastric derangement or constitutional injury. Galvano-cautery, lactic acid, and iodine and carbolic acid applications were used. The latter combination (each crystallized 1 to 4) appeared to destroy the fœtor most effectually during the stage of sloughing. The duration of this case was one year.

Ætiology, Surgical Pathology, and Treatment of Hæmorrhage after Tonsilotomy. By Dr. D. B. DELAVAN.

Varieties:—(1) Arterial: from division of one or two large arterial branches. (2) Arterial: from division of numerous arterial twigs. (3) Venous: from divi-

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sion of small plexus of veins which lie below and outside of tonsil. (4) Capillary, or general: from presence of hæmorrhagic diathesis. First two varieties most common. With them age an important factor. Of eight cases known to the author, the youngest was 24; oldest 34; average age 28 years. All were males. In all examined microscopically there was marked hyperplasia of fibrous stroma of tonsil, with dilatation of the arterial branches. This explained their failure to contract.

Blood supply of tonsil, excepting for ascending pharyngeal, derived almost exclusively from external carotid. Internal carotid too remote to be itself injured, while in cervical section it gives off no branches. Not an authentic case on record where tonsillotomy, performed for simple hypertrophy and by modern methods, has proved fatal. The study of cases of severe arterial hæmorrhage shows (1) that ligation of common carotid, in most instances, has failed; (2) that bleeding has continued, in spite of all after efforts to stop it, until the patient has fainted, when it has ceased, and, as a rule, has not recurred. This because (1) ligation of common carotid does not stop collateral circulation through Circle of Willis, and (2) because arterial tension and cerebral hyperæmia are relieved.

Treatment.—Ligation, except of external carotid, useless. In variety (1), torsion, ligation, or cauterization of vessel. In (2), if other means have failed, opium; constriction of extremities; upright position of head, if possible; ligation of base of tonsil; encouragement of syncope. In (3), pressure; direct application of cold (or heat). In (4), pressure; cold; styptics.

Effects of varying rates of stimulation on the action of the Recurrent Laryngeal Nerves. By FRANKLIN H. HOOPER, M.D., Boston.

In a preliminary communication Prof. H. P. Bowditch and Dr. Hooper recorded the fact that the rate of stimulation of the recurrent laryngeal nerves was an important factor in producing an opening or closing of the glottis. Later investigations had established the following conclusions:—

1. It requires a more rapid rate of vibration to produce a closure of the glottis in cats than in dogs.

2. In cats the rates of stimulation necessary to effect a closure must be from 70 to 80 a second; in dogs from 30 to 40.

3. Rates slower than 70 a second produce in cats an opening of the glottis; in dogs rates slower than 30 produce opening.

4. The intensity of the current influences the effect of varying rates of stimulation.

5. Weak currents, with slow rates, produce opening.

6. By increasing the rates, the intensity remaining the same, closing results.

7. By increasing the intensity, the rate remaining the same, closing results.

8. Closing is produced more readily by increasing the rate than by increasing the intensity.

Mr. VICTOR HORSLEY, of London, being invited to open the discussion, expressed his gratification at hearing the report just presented. Dr. Hooper had been the first to show the effects of certain drugs upon the larynx, and now the first to demonstrate the different rates of stimulation upon the larynx. It especially interested the speaker to know that he had obtained a repetition of the phenomena in the cat which Mr. Horsley had previously observed. One of the results of these experiments was the determination of the existence and location of a cortical centre for the larynx in the cat. Contrary to what usually occurred in the dog, it was found that stimulation of this cortical centre produced abduction of the vocal cords, and it was consequently very interesting to the speaker to learn that Dr. Hooper had observed the same thing by stimulating the recurrent nerve that Dr.

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Semon and he had obtained by stimulating the cortex. He urged Dr. Hooper to extend his investigations to the cortex, and to repeat them upon monkeys, and thus independently arrive at results which might test observations made by others.

Dr. H. P. BOWDITCH, of Boston, was especially interested in the reverse action of certain laryngeal muscles when the intensity of the stimulation was increased. The first explanation of this might be that the opening muscles were more irritable but less powerful than the closing muscles. Light stimulation, therefore, would affect the former and not the latter, but upon continuing the stimulation, the latter, being stronger, would close the larynx in opposition to the weaker opening muscles. But another explanation must be given of the different effect produced by altering the rate of stimulation. These experiments had been begun in order to investigate the results of Wadenski obtained by stimulating the muscles of the leg, in connection with Ritter's well known experiments upon the sciatic nerve. They had never been able to confirm the results of Wadenski. The speaker asked Mr. Horsley if he had any theory to explain the varying action of the muscles of the larynx under different rates of stimulation.

Mr. HORSLEY said that he had none to offer. In his own experiments upon the recurrent laryngeal nerve he had observed in a few instances that different effects were produced when the electrodes were to the inner side of the nerve than when they were placed upon the outer side.

Officers for the ensuing Year:—Dr. E. CARROLL MORGAN, of Washington, president; Dr. W. C. GLASGOW, of St. Louis, and Dr. CHARLES E. SAJOUS, of Philadelphia, vice-presidents; Dr. D. BRYSON DELAVAN, of New York, secretary and treasurer; and Dr. THOMAS R. FRENCH, of Brooklyn, librarian. The next place of meeting is at Washington, and the time the last Tuesday of May, 1889.

D. Bryson Delavan.

NOTE.

PROF. MASSEI, our eminent collaborateur, has just been appointed Extraordinary Professor of Laryngology at the University of Naples.

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