ABSTRACTS.

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PHARYNX.

Ludwig's Angina.—Voorhees. "The Laryngoscope," March, 1918 p. 177.

Male, aged fifty-one, for some years troubled with radidly decaying teeth and pyorrhœa. In September, 1916, he began to suffer from toothache in the right lower canine. Two days later there was a small nodule below the jaw. Voorhees found both lower canines in the last stages of decay, and an "extractionist" removed both carious teeth under gas anæsthesia. On the following day the swelling had markedly increased under both inferior maxillæ, but on the left side had begun to reach upward over the face and downward into the cervical region. Ice was applied. Examination showed œdema of the faucial region. There was some difficulty in breathing. Under novocaine anæsthesia an incision was made from the angle of the left jaw to the symphysis menti. At the angle of the jaw a small quantity of very foul pus welled up into the wound. A cigarette drain was introduced. Temperature 104° F. Fever continued for a week. A second incision was made, about one inch above the clavicle. At this time the upper incision was occupied by a greenish-black, foul, sloughing mass. Black, tarry discharge mixed with gas was later drained from the lower wound. Undiluted peroxide was dropped into the wounds for twenty minutes at a time, followed by normal saline. The dressing was changed three or four times a day. At the end of one week the slough had separated, and it was possible to pick out masses of necrotic material with forceps. Healing went on rapidly, complicated, however, by a sequestrum of part of the lower jaw. Complete recovery.

J. S. Fraser.

Peritonsillar Abscess, followed by Osteomyelitis, Necrosing Encephalitis and Meningitis.—Andrew Wylie and **Wyatt Wingrave.** "Lancet," February 1, 1919, p. 178.

A woman, aged forty-eight. Attack of tonsillitis and right peritonsillar abscess. A gargle the only treatment. Five days later swelling of left eyeball and pain in throat and back of head. Worse eleven days later, and consulted ophthalmologist. Then seen by Dr. Wylie. Pain in head, neck and cervical region; speech not clear. Left ptosis and proptosis. Temperature 102° F. Peritonsillar abscess incised, and large quantity of foul pus evacuated. Twenty-five c.c. antistreptococcal serum given. The case went from bad to worse, proptosis appearing in the other eye two days later, and foul pus still escaping from the faucial incision. Next day she was drowsy, restless and sleepless. Temperature 104° F.; slight rigor. Twenty-four hours later unconscious. Right eye showed "choked disc," with venous thrombosis and small hæmorrhages. Temperature 102° F.; severe rigor. The patient con-

tinued thus for two days and then died. *Post-mortem:* A sloughing space about level of soft palate, which travelled back in deep cervical fascia to prevertebral area. Pocket of green pus traced in prevertebral muscles to basi-occipital and basi-sphenoid bones, the cancellar structure of which was a soft green fœtid mass, extending into ethmoid and orbit. Diffuse purulent meningitis involving whole brain. Necrosing cortical encephalitis to a depth of 3 cm. over right temporo-sphenoidal area. All ventricles distended with green pus. Jugular bulb, sigmoid and lateral sinuses firmly thrombosed. Films of the pus showed streptococci, staphylococci, mycelia, and coarse forms of *Spirochæta fœtida* with some bacilli of xerosis type (diphtheroid). *Macleod Yearsley.*

Bacteriology of Tonsil Crypts.—Maclay. "The Laryngoscope," August, 1918, p. 598.

Maclay has examined 536 tonsils removed at operation (268 cases). The surface of the tonsil was cauterised and a sterile sharp knife used to cut cleanly into the crypts. From these crypts smears and cultures were made. The relation of smears and cultures shows decided variations in the cases studied. One type of organism may be found on a smear, while in the culture a good growth of some other organism appears with only a few colonies of the one found on smear. In almost all cases when on organisms were found in smears Maclay obtained on culture media a number of luxuriant colonies. Staphylococci were found fifty-three times in pure culture, streptococci and pneumococci each giving seventeen pure growths. (Tubercle bacilli only found once. This case had pulmonary tuberculosis and tubercular glands of the neck.) *Streptococcus hæmolyticus* was found seventeen times but the *Streptococcus viridans* only once. Only two cases showed negative smears and cultures. Three others showed organisms in smears but gave negative cultures, making five cases in all with negative cultures. Result: 268 cases—staphylococci, 166; pneumococci, 121; streptococci, 133; *Streptococcus hæmolyticus*, 17; *Streptococcus viridans*, 1; diplococci, 49; bacilli, 5; hay bacilli, 2; tubercle bacilli, 1. *J. S. Fraser.*

Results obtained by Tonsillectomy in the Treatment of Systemic Diseases.—Layman. "The Laryngoscope," February, 1918, p. 65.

Layman believes that the most important work in medicine in the last decade is the elucidation of the relationship of focal infection, especially that of diseased tonsils, to systemic disease. To-day tonsillectomy as a therapeutic measure in the treatment of systemic diseases is very popular, and is followed by improvement in the general health of the patient. Some have, however, claimed that the tonsil is held responsible for too many diseases, and that the beneficial effects do not justify the numerous enucleations. Layman has sent a *questionnaire* to laryngologists and internists requesting information regarding the results obtained by tonsillar enucleation in cases of arthritic, cardiac, renal and other systemic diseases. The reports include 894 cases: (*a*) Real cures: Arthritic, 68 per cent.; cardiovascular, 36 per cent.; renal, 81 per cent. (*b*) Considerable improvement: Arthritic, 20 per cent.; cardiovascular, 18 per cent.; renal, 5 per cent. (*c*) No improvement: Arthritic, 12 per cent.; cardiovascular, 46 per cent.; renal, 14 per cent. These are exceedingly satisfactory results.

The writer admits that tonsil enucleation alone does not have a beneficial effect on well-established conditions, viz. definite arthritic

changes and deposits, as ankylosis and fixation, chronic renal disease or chronic heart and blood-vessel disease, etc. Care must be exercised in the selection of cases. One observer said that the real cures in these cases followed only after a post-operative use of the autogenous vaccine and local treatment. Another observer reports a large series of thyroid enlargements with pronounced tachycardia as markedly benefited by tonsillectomy. Surgeons differ in their views as to the time of performing tonsillectomy, some advocating it before and others after thyroid operation. At the Mayo Clinic they do the partial thyroidectomy to relieve the symptoms, and the tonsillectomy to prevent, if possible, recurrence of hyperthyroidism in the remaining lobe.

Tonsillectomy should not be performed closely following convalescence from an acute purulent infection, such as middle-ear or nasal sinus suppuration. Reports show that such cases have developed septicæmia. Hospital *internes* and nurses, especially in recent active service with septic cases, should be given a temporary leave of absence before undergoing tonsil enucleation. The possibility of acidosis must be reckoned with. When this is suspected, examination of the urine for diacetic acid or acetone should be made before operating. Some operators advocate a pre-operative treatment of acidosis in all cases. Albuminuria following the removal of the tonsils has been attributed to the fact that a certain amount of infective material is squeezed out of the tonsils during the course of the operation and injected into the circulation.

Conservatism in tonsil enucleation in early childhood has been the practice of most laryngologists. Competent pædiatricians, however, like La Fetra, of New York, have never been able to notice any abnormality in growth or development in those boys and girls whose tonsils were removed in early childhood. Children whose tonsils have been removed are much less susceptible to respiratory and gastro-intestinal disturbances of all sorts.

In view of these reports Layman asks, "Should we not seriously consider the removal of the tonsils as a wise prophylactic measure in early childhood in many more cases than formerly?" *J. S. Fraser.*

NOSE.

Very Rare Case of Foreign Body in the Nose.—C. Caldera. "Arch. Ital. di Otol.," vol. xxx, No. 1.

Peasant, aged twenty-one. At age of 16, when working in fields with pair of oxen received a severe blow of horn on the mouth, or more precisely on alveolar process of left maxilla at the level of canine tooth. Had severe bleeding from mouth and nose. Bleeding lasted four days, with great swelling of left cheek and eyelid. Loss of left canine tooth noticed. For about a year had pain in left half of face, but was able to continue his work. After fourteen or fifteen months had abscess of gum which was lanced by doctor and some pus and two splinters came out. Healed quickly, but purulent discharge persisted in nose. Called up to army, and after being in many hospitals had another splinter removed in January, 1917, and sent to writer as case of antrum suppuration.

Examination.—Left upper canine missing. Gums healthy and normal. Anterior rhinoscopy showed congestion of whole of left side of nose. On floor of nose at $2\frac{1}{2}$ cm. from anterior naris an obscure mass seen lying transversely, and surrounded by granulations and covered with mucus. Hard,

smooth foreign body. Extraction with forceps at first unsuccessful. Freed with scalpel and removed with some difficulty, as it was tightly jammed under the turbinate. Now seen to be a canine tooth all blackened except round the neck, where it was of normal colour. Some granulations were adhering to this part. There was no communication with the antrum. *J. K. Milne Dickie.*

Vasomotor Rhinitis followed by Asthma and Symptoms of Paranoia.—Davies. "The Laryngoscope," June, 1918, p. 475.

Female, aged fifty-one. No history in the family of any mental disease. As a child she was bad tempered. First attack of vasomotor rhinitis occurred twenty years ago after dancing. The attacks recurred annually over a period of nine years. Ten years ago the attacks grew shorter, and did not develop until the end of August. At this time asthma and the nervous phenomena appeared. At first they consisted simply of marked excitement, but each year they increased in severity. "The patient becomes most excitable, is afraid that people are trying to poison her, or that her family are endeavouring to take her property away from her. Gradually she becomes quieter, sleeps better, and in twenty-four hours will be her normal self." The patient has never permitted a thorough examination of her nose and throat, but as far as it has been possible to investigate, these regions are normal.

J. S. Fraser.

Asthma from the Point of View of the Rhinologist.—R. Graham Brown. "Med. Journ. of Australia," December 7, 1918.

Asthma has always a neuropathic basis. In addition to this it has numerous and varied exciting conditions. In considering treatment a correct grouping is necessary. It would be absurd to treat asthma due to aortic aneurysm by cauterising the nose. On the other hand, if the symptom is due to pressure in the middle turbinal region mere change of climate is inadequate. This grouping is described in the paper, and its bearing on the treatment employed and the prognosis is indicated. Subgroup No. 2: Hypersensitive nasal mucous membrane and so-called asthma spots, where various intra-nasal deformities exist, giving rise to contact and intra-nasal pressure. Good results follow intra-nasal treatment. Brown speaks with high appreciation of the method of Francis, "which is entirely his own." He regrets that many medical men "who profess to follow Francis" have not the slightest idea of his "streak" cauterisation. Francis produces as little destruction as possible. He is guided in his treatment by its effect on the blood-pressure. (1) Blood-pressure 155 mm. Hg., outlook excellent; (2) blood-pressure 130–155 mm. Hg., not so good; (3) blood-pressure below 130 mm. Hg., seldom improved by cauterisation. Robertson, of Brisbane, and now Brown, of the same locality, support this theory of Francis. Their views deserve consideration, and if generally supported by the experience of other observers, a useful guide in the treatment of asthma by intra-nasal methods will be established. *A. J. Brady.*

Asthma Considered in its Relationship to the Vegetative Nervous System.—F. M. Pottenger (Monrovia). "Amer. Journ. Med. Sci.," March, 1918.

The vegetative, involuntary or automatic nervous system is divisible into two mutually antagonistic portions, the one originating in the thoracic and upper lumbar segments of the cord and known as the

sympathetic system, the other arising from the medulla, bulb, and sacral portions of the cord, comprising the vegetative fibres of the third, seventh, ninth and tenth cranial nerves as well as those in the pelvic nerve, and known as the greater vagus. The author's view is that asthma is a disturbance in function, consisting of an increase in the tonus of that portion of the greater vagus nerve which supplies the bronchial musculature and mucous membrane. Its causes may be as diverse as the irritants which may be applied to the nerve centres which give origin to the pulmonary fibres, or to the peripheral nerves that are in reflex relationship with them. As all toxæmias which are sufficiently severe may produce the toxic syndrome, so all irritations, either reflex or central, which produce sufficient stimulation of the nerve-cells giving origin to the pulmonary filaments of the vagus may produce asthma. Patients who show increased tonus in the pulmonary branches of the greater vagus (asthma) are prone to have increased vagus tonus in one or more other organs. Hay-fever, hyperchlorhydria, spastic constipation and intestinal stasis are commonly found in patients who suffer from asthma.

Thomas Guthrie.

A Vaccine for the Treatment of Bronchial Asthma: Report of Twenty Cases.—J. M. Hutcheson and S. W. Budd (Richmond). "Amer. Journ. Med. Sci.," June, 1918.

Bronchial asthma has now, from the standpoint of ætiology, been permanently removed from among the neuroses, and fully explained as a manifestation of protein sensitisation. The writers believe that the specific protein exists in the bronchial secretion of the patient himself; that it is elaborated by the bacterial content of the sputum; and that it may be recovered in a suitable form for use in bringing about immunity.

A mixed vaccine made from the sputum by incubating with broth and a drop or two of guinea-pig serum was used in twenty cases. Each cubic centimetre of the suspension contained from 500 to 1000 million of the organisms; the initial dose was 5 minims, and each subsequent dose was increased by 1 minim up to, but not beyond 15 minims. The injections were in most cases given twice a week. In twelve of the cases complete relief from attacks was obtained after one to five injections, and this had persisted up to the time of writing—the longest period being sixteen months and the shortest six weeks. In five cases distinct improvement was noticed. In two cases no effect was produced, while in one the injection seemed to increase the paroxysms—a result which was thought to be due to the fact that too long an interval was allowed to elapse between the injections.

Thomas Guthrie.

LARYNX.

Acromegaly of the Larynx.—Chevalier Jackson. "Journ. Amer. Med. Assoc.," November 30, 1918.

Four cases of acromegaly are here reported with laryngeal symptoms, for which for the first time a doctor was consulted. The cases had not been previously diagnosed. In one of them considerable ossification of the laryngeal cartilages had taken place. The following conclusions are drawn:

(1) The larynx should be examined in every case of hypophysial abnormality. (2) The overgrowth characteristic of acromegaly in some

cases involves the laryngeal cartilages and soft parts. (3) Acromegalic changes in the larynx may produce stenosis sufficient to require tracheotomy to prevent asphyxia, dyspnœa being added to by impairment of the glottic movements, resulting in a defective bechic cycle. (4) In three out of four cases the laryngeal mucosa was normal. In one the chronic laryngitis present was probably a coincidence. (5) In three of the four cases the laryngeal image was not symmetrical, though the laryngeal enlargement seemed so by external palpation. (6) In all cases of apparent hyperplasia of the larynx acromegalic overgrowth should be listed for diagnostic exclusion. (7) Laryngeal examination should be recorded as a routine in all cases of hypophysial abnormality for the accumulation of data. (8) Altered voice in acromegaly may be due to laryngeal changes as well as to alteration in the resonating cavities, lingual enlargement, etc.

J. K. Milne Dickie.

A New Camp Disease of the Larynx: "Pneumococcus Ulcerative Laryngitis."—Capt. F. D. Owsley. "Annals of Otology," xxvii, p. 874.

Claimed to be a form of laryngitis undescribed in the literature. Founded on 120 cases. The initial stage is a bilateral ulceration of the vocal cords, usually on the anterior third, elliptical, and involving the free borders. A specific local infection is claimed as the cause. In forty cases smears showed the pneumococcus to be the only constant and predominant organism present. Streptococcus, staphylococcus and *Micrococcus catarrhalis* were occasionally present. The author considers his findings and conclusions supported by the large number of pneumococcus infections prevailing in the camp (Camp Travis, San Antonio, Texas). Practically the only symptom was aphonia (85 per cent.). Many had night paroxysms of cough. The only local treatment found useful was applications of silver nitrate (beginning with 2 per cent. and increasing to 5 per cent.).

Macleod Yearsley.

Laryngeal War Injury; Death from Acute Miliary Tuberculosis.—A. Luzzati. "Arch. Ital. di Otol.," vol. xxx, No. 1.

A case in which a soldier was hit in the throat, shoulder and leg by shell fragments. The projectile passed through the thyroid cartilage from side to side. When first seen the entrance wound was discharging pus; exit wound closed. Patient suffering from aphonia, violent cough with copious purulent sputum, and difficulty in swallowing. No history of previous illness.

Examination.—Epiglottis pale; infiltration of false cords. Posterior third of right cord showed large loss of substance and whitish secretion. Left cord also infiltrated and red with irregular margins. Cords approached on phonation.

Examination of chest showed nothing notable at the bases, but feeble breath-sounds at the apices. No crepitations. Nothing to note in other organs.

Patient improved with simple local treatment, and larynx showed less inflammation. Three weeks after admission had a rigor, temperature rose to 39° F., wound discharged quantity of pus, cough became worse with copious secretion, respiration rapid. Fine crepitations all over chest. Sputum contained tubercle bacilli. Patient died four days later. At autopsy some small cavities found at apices of lungs with dense connective-tissue walls. Lower parts of lungs covered with miliary tubercles.

Miliary tubercles also found in intestines. Larynx showed extensive ulceration of posterior surfaces of epiglottis and of both arytænoids. Mucous membrane nodular. False cords thickened. Right cord ulcerated, left thickened. Septic track seen going through left side of cricoid to the surface.

Writer believes that the septic wound became secondarily infected from a latent tuberculosis of the lungs. *J. K. Milne Dickie.*

An Implantation Cyst of the Larynx.—Dean and Gregg. "The Laryngoscope," February, 1918, p. 74.

Dean and Gregg state that an implantation cyst is one which arises from the accidental intrusion into the subcutaneous or submucous tissues of epithelial cells which retain their vitality. It may be looked upon as an acquired or traumatic dermoid. *Case report:* Female, aged fifty-eight, had pulmonary tuberculosis of four years' duration; for six months recurring attacks of hoarseness; no dysphagia. Examination of the larynx revealed marked inter-arytænoid infiltration. Treatment included suspension and curettage of the diseased areas in the larynx every two weeks. Four months after the beginning of the treatment the larynx was declared to be apparently healed. Six months after the patient was discharged she returned for the "routine follow-up" examination. The writers found a dome-shaped elevation in the interarytænoid space. The patient was suspended and the mass removed. Microscopic examination showed that the surface of the cyst was covered with squamous epithelium, which was practically normal. In the underlying connective tissue there was a small cyst lined with squamous epithelium, of the same type as that which covered the surface. The cyst had no connection with the surface epithelium. Its cavity contained a small amount of granular material. *Diagnosis:* Implantation epithelial cyst. At subsequent visits the larynx was found to be apparently healthy.

J. S. Fraser.

Cartilaginous Tumour of the Larynx.—New. "The Laryngoscope," May, 1918, p. 367.

New states that cartilaginous tumours of the larynx occur but rarely—forty-seven in all recorded up to recent times.

Classification.—(1) Chondromas, invading the mother-substance—most cases malignant; (2) Mixed tumours, *e.g.* myxochondromas; (3) inflammatory?; (4) general hypertrophy of the cartilages of the larynx.

New reports the following case: Male, aged forty-four, hoarse for four years. Twenty-three years previously he was hit by a baseball over the larynx. Six months before his visit tracheotomy was performed on account of dyspnœa. External examination showed a tumour about 1·5 in. square, rounded in outline, bony, hard, and fixed to the right side of the larynx. Laryngoscopy showed the right cord, the false cord, and arytæno-epiglottic fold displaced toward the middle line, a small slit being left for the passage of air. Operation under novocaine anæsthesia. The tumour invaded the thyroid and cricoid cartilages and the upper part of the trachea. Microscopic examination showed the growth to be a chondroma. The tumour could have been shelled out, but as this would have necessitated a large opening into the larynx and trachea, which would have destroyed the voice, it was thought best to leave a thin shell of the tumour. The wound was closed. Convalescence was favourable. Two years later no change in the voice and no sign of recurrence. The larynx was in the same condition as before.

New has collected nine recent cases. The cricoid was involved in eight, the thyroid in two, and the arytænoid in one. *The normal appearance of the mucous membrane of the entire larynx is characteristic of cases of cartilaginous tumours.*

Prognosis and Treatment.—Three patients died of suffocation before tracheotomy could be done. One died following tracheotomy. Of fifteen patients operated on by the external route, five died from pulmonary complications shortly after operation and five improved for varying periods of time. *J. S. Fraser.*

EAR.

Studies on the Origin of the Labyrinthine Fluid.—Otto Fleischmann. "Arch. f. Ohren.," Bd. cii, Heft 3–4, 1918.

The writer has attempted by means of vital staining to determine from the presence or absence of the so-called pyrrol or wander-cells whether the labyrinth fluids are independent secretions or are simply cerebro-spinal fluid. Pyrrol cells are found in organs with an internal secretion, but not in those with an external secretion, with the exception of the kidney. Cats, guinea-pigs and rabbits were injected with trypan blue or isamin blue. The results of vital staining of the inner ears were completely negative. There was no trace of blue in the labyrinth. In the middle ear numerous pyrrol cells were found. The choroid plexus also showed large numbers, and there were even a few in the bony interspaces. The writer concludes that "in all probability there is no secretion of labyrinthine fluid in the inner ear, and that the endo- and perilymph are probably not an independent secretion, but are derived from the cerebro-spinal fluid." *J. K. Milne Dickie.*

The Cotugno-Helmholtz Theory of Hearing.—G. Gradenigo. "Arch. Ital. di Otol.," vol. xxix, No. 3, September, 1918.

The writer shows how in 1761 Domenico Cotugno propounded a theory of hearing very similar to that elaborated a century later by Helmholtz. Up till Cotugno's time anatomists believed that the labyrinth was filled with air. Valsalva had regarded the basilar membrane as a resonating board vibrating in air, but erroneously thought that it was broader at the base than at the apex of the cochlea. Cotugno demonstrated that the labyrinth is constantly filled with fluid. He described in detail the basilar membrane, the vestibule, the two windows, the helicotrema and the two aqueducts. He showed that the basilar membrane became wider towards the apex. He established definitely that the aqueducts of the cochlea and vestibule were for the passage of labyrinthine fluid and were not venous canals. He saw the utricle indistinctly, but mistook it for a septum dividing the vestibule into two.

As for the mechanism of hearing, he regarded the basilar membrane as a series of tense strings of varying length, each of which was set in harmonic vibration by a definite tone.

Cotugno was born at Ruvo in 1736. He went to the Hospital for Incurables at Naples at the age of 17, and graduated in medicine at 20 in Salerno. At the age of 23 he was nominated Professor of Surgery for Internal Students. In 1761 he published his dissertation "De aquæductibus auris humanæ internæ" in Naples. During his life he acquired wide fame as an anatomist and clinician.

The credit for the introduction of the resonance theory is undoubtedly due to Cotugno, though owing to the state of knowledge of his time and the inadequate means of research at his disposal many of his details were inaccurate. *J. K. Milne Dickie.*

Comparative Researches on the Lesions Caused by Air-conduction and Body-conduction of Floor Vibrations on the Auditory Apparatus. —**K. Wittmaack.** "Arch. f. Ohren.," Bd. cii, Heft 1-2, 1918.

In a previous work the writer had been led to conclude that, besides those caused by purely air-conduction, lesions could be produced by conduction through the body alone.

In order to determine this more exactly an apparatus had to be contrived in which air-conducted sound was either too low in the tone scale or of too weak intensity to damage the ear. Two series of experiments were made. In the first series guinea-pigs were kept in cages on a long brass plate, on one end of which two hammers beat continuously, making a loud, high-pitched note. A control was made by keeping other guinea-pigs on an identical plate, but on which there was no hammering. The animals were exposed to this noise for twelve hours daily for a period of two to five months.

The results obtained were that the organ of Corti and the corresponding nerve-cells were completely destroyed in the basal coils of the cochlea. The animals on the control plate showed identical lesions. It is also worthy of note that the animals killed after only two months' exposure did not differ in degree from those killed after four months' exposure. From this it seems certain that the maximum of damage caused by sound conducted purely by air is reached comparatively quickly, and that with sounds of constant intensity prolongation of the exposure does not necessarily produce greater lesions.

One of the animals was exposed to the sound for nearly five months, and in this case, besides the lesions in the basal coils, there were some additional changes in the apical coil, with an intact region in between. As is shown by the following series of experiments, this was due to the effect of vibrations transmitted through the body.

In the second series of experiments the conditions were the same, except that a layer of felt was interposed between the hammers and the brass plate. As a result of this the sound was very much damped and the tone was deepened into a much lower key. The vibrations of the plate were easily perceptible to the finger, though only heard with difficulty. The animals were exposed to this for six to eight months. The control animals were absolutely normal and showed no trace of any damage by sound-waves. The animals on the vibrating plate, on the contrary, showed obvious characteristic changes, viz. reduction of nerve-cells and fibres in the upper windings of the cochlea, especially in the region between the apical and second coils. At the same time there was distinctly seen destruction of the sense-cells of the organ of Corti, while there was no change in the supporting cells. In these animals also the lower windings were absolutely normal.

These results agree with those of the author's experiments of ten years ago. The results of vibrations conducted through the body thus differ most decidedly from the lesions produced by purely air-conducted sound. In the former one finds that isolated nerve-cells and fibres and the sense-cells of the organ of Corti are destroyed, while at the same time the supporting cells are intact. In the latter the whole organ of Corti is destroyed.

These experiments show that where the intensity of the air-conducted sound is not enough to cause damage, but where at the same time there is strong vibration of the floor, lesions in the cochlea can be produced by vibrations conducted purely through the body.

The practical result of these researches is that in occupational deafness the initial lesions are produced by air-conduction and remain stationary, but that the later increase in deafness is due to lesions caused by vibrations transmitted from the floor through the body. Hence it becomes doubtful if plugging the ears will have any effect in checking the progress of the deafness. *J. K. Milne Dickie.*

BRONCHI AND ŒSOPHAGUS.

A New Diagnostic Sign of Foreign Body in Trachea or Bronchi—the "Asthmatoid Wheeze."—Chevalier Jackson. "Amer. Journ. Med. Sci.," November, 1918.

The writer draws attention to a sign which he has found to be present in a fair proportion of cases of foreign bodies in the trachea or bronchi. He considers it to be of diagnostic value especially in instances where the foreign body is not opaque to the X rays, and where physical examination of the chest reveals very slight or no pathological changes in the lung. It occurs where the foreign body does not completely occlude the passage in which it lies. It is heard by placing the ear opposite the patient's open mouth. When not at once heard, it may be elicited by asking the patient to expel forcibly the residual air. It is also heard better after expectoration of secretion, unlike the wheezing of bronchitis. The presence of a croupy cough points to the larynx rather than the trachea or bronchi, while the asthmatoid wheeze only occurs in bronchial or tracheal cases. Several cases are quoted demonstrating the value of the asthmatoid wheeze when present, and incidentally of a careful physical examination of the chest in all foreign-body cases, whether already localised or not. The sign is of less value if negative. "Being heard at the open mouth it is of no localising value as to which lung is invaded, though there is hope that further study may develop perceptible differences between tracheally and bronchially lodged foreign bodies." It is of more value in a recent case than in one in which secondary complications have set in.

"The asthmatoid wheeze was not present in any case in which a smooth, rounded body was so tightly wedged in a bronchus that no air could pass it. Smoothness or roughness of surface seem important chiefly as they influence tightness of inspiration."

J. K. Milne Dickie.

Foreign Bodies in the Larynx, Trachea, Bronchi, and Œsophagus Ætiologically Considered.—Chevalier Jackson. "Trans. Amer. Med. Assoc.," 1917, pp. 36–56.

Chevalier Jackson writes from the experience of over 600 cases. One of the principal causes of foreign bodies in the air- and food-passages is carelessness in putting inedible substances into the mouth, carelessness in eating and drinking, and inadequate supervision of young children.

In 81·6 per cent. of the cases the patients were under 15 years of age. All cases of water-melon seeds in the bronchi were in children, as were

also coins in the œsophagus. Nearly all cases of meat in the unstrictured œsophagus occurred in adults.

The influence of poverty in ætiology is fairly considerable, probably due to insufficient care of children.

Dental and surgical accidents were responsible for a certain number of cases. *J. K. Milne Dickie.*

Difficult Mechanical Problems of Bronchoscopic Foreign-Body Extraction.—Chevalier Jackson. "The Laryngoscope," October, 1917, p. 725.

Jackson reminds us that to pull upon a sharp, entangled foreign body in the bronchi or œsophagus is to court disaster. When a difficult case is encountered Jackson studies his previous cases of the same kind. He next does a bronchoscopy (or œsophagoscopy) with all previously used instruments at hand in case they may be adequate. If they are not, he takes mental notes and measurements, and then proceeds to make a series of probes or other instruments, and tests them on the work-bench, using a piece of rubber tubing as a manikin. One end of the tubing is held in a small vice. If the newly made instruments do not enable the endoscopist to disentangle the foreign body in this manikin, it is obvious that they will not enable him to do it in the living patient. Having solved the problem on the manikin, the real problem is then attempted, and usually with success. Jackson is able to modify his probes by means of a spirit lamp and sterile pliers, which are ready in the operating room. The new instrument must be allowed to cool slowly in order to avoid brittleness. For practically all purposes annealed steel serves best. The tools needed for this work are mainly those of the jeweller. A good precision lathe is essential, also a small jeweller's bench, vice, files, pliers, anvil and polishing tools.

Jackson gives an illustrative case of an infant, aged four months, which aspirated a bar pin. Tracheotomy had already been done, and two attempts at removal made by other endoscopists. On admission the infant's temperature was 104° F., pulse 158, and respirations 52. The breath was foul, the lips cut, and muco-pus streaming from a tracheotomy wound. The infant was obviously suffering from surgical shock and sepsis, and only began to improve very slowly. In three weeks the patient was in fairly good condition. A radiogram now showed the bar pin in the left bronchus, about 6 mm. from the bifurcation. Without anæsthesia the 4 mm. bronchoscope was passed through the mouth to the left bronchus, which was filled with pus. The walls were so swollen that the pin was hidden. No attempt at removal was made at the time. Jackson concluded that the pin had been at first lying loose in the trachea, and that traction had caused the pin-point to enter the tracheal wall. To liberate the point the pin had been pushed downwards, and again traction had caused the point to enter the wall of the bronchus. The greatest difficulty arose from the fact that the œdema of the mucosa left no room at the side of the pin in which to work, as the stem bronchus of a child of four months is not over 3 mm. in diameter.

The method finally worked out on the manikin was as follows: A fine bent probe was formed to the proper curve to be insinuated by rotation, while a fixing rod gently held the proximal end of the pin in position. Rotation of the bent probe now closed the pin, thus rendering withdrawal by means of forceps safe and not difficult. No general or local anæsthetic was used. The child made a good recovery. *J. S. Fraser.*

MISCELLANEOUS.

Disruptive Phenomena in Gun-shot Injuries.—S. G. Shattock. "Proc. Roy. Soc. Med.," July, 1918, Section of Pathology, p. 47.

Whether or not a disruptive effect will take place in a hollow organ, assuming the missile to be at high speed, depends upon the nature of its contents. Some hollow organs, like the pharynx, larynx and trachea, are normally open and filled with air. Some are normally in a closed, *i. e.* strictly empty condition, like the œsophagus; some contain fluid and gaseous contents, like the stomach and intestine.

In doubly perforating wounds of the pharynx, larynx and trachea, the apertures of entry and of exit are, as might be anticipated, small and of equal size. The absence of disruptive effect in the case of these organs is, it is hardly necessary to observe, due to the compressibility of the air contained within them, and its free communication with the exterior. In regard to their walls, these are of insufficient mass, *i. e.* too thin, to allow of the production of such an effect upon them; the wall is simply perforated like the diaphragm, or the skin, or the peritoneum.

Specimens of gun-shot wounds involving the larynx, others of wounds involving the trachea, and lastly of those involving the œsophagus are shown and described. *Archer Ryland.*

A Further Investigation into Influenzo-pneumococcal and Influenzo-Streptococcal Septicæmia: Epidemic Influenzal "Pneumonia" of Highly Fatal Type and its Relation to "Purulent Bronchitis."—Major A. Abrahams, Capt. Hallows, and Lieut.-Col. H. French. "Lancet," 1919, vol. i, p. 1.

This is a continuation of the work published in the *Lancet* on September 8, 1917, and contains several matters of considerable rhinological, otological and laryngological interest. These may be enumerated as follows, and refer to the recent epidemic:

Epistaxis.—May be alarming. Has been an unusually common phenomenon, sometimes at the beginning, more often after the patient has gone to bed. Epistaxis is not confined to the pneumonic cases. The blood has been generally bright red, and the prevalence acquires greater significance by the frequency of the *post-mortem* finding of pus in sphenoidal and ethmoidal sinuses teeming with pneumococci (and sometimes Pfeiffer's bacillus). It is of the character of an inflammatory erosion of an arteriole, suggesting that the pneumococci reach the lungs *viâ* the nose, nasopharynx and accessory sinuses and not *vice versâ*. Hence prophylactic gargling and nasal douching is wise in the early stages of *all* influenza cases.

Laryngeal Symptoms have been more frequent recently, varying from huskiness to complete aphonia. Not necessarily a prelude to pneumonia.

Otitis Media.—In a number of cases the hearing has been much impaired, even to temporary stone deafness. This is probably middle ear, but quinine prophylaxis may be a factor, although complete deafness has occurred where no quinine, aspirin, or salicylate has been given. The chief cause is probably pneumococcic infection *viâ* the Eustachian tube, as deafness has in some cases been relieved by perforation and discharge. In one case the discharge was almost pure blood. The radical mastoid operation may be required.

Meningitis has not been met with. Meningococcal meningitis and

cerebro-spinal fever may, however, be mistaken for influenza unless bacteriologically disproved.

Post-mortem Findings.—Tracheitis (sometimes with *laryngitis*) and *bronchitis are* very common indeed, suggesting extension from above. The *thyroid gland* is considerably enlarged as a rule. In 19 out of 20 cases pus was found in the *sphenoidal sinus*—doubtless a contributory factor to the severe headache often complained of. The early onset of sphenoidal sinusitis is much against its origin as an infection from the lungs. This, with the frequency of otitis media, greatly emphasises the importance of the nasopharynx as the original site of infection—a practical point, which insists upon the simple antiseptic toilet of the throat and nose by healthy persons exposed to infection as well as in early stages of influenza. The solutions used by the authors in their practice were either pot. permanganat. 1 : 4000 or tinct. iodi one drachm to the pint; in addition, medical officers, nurses and orderlies wore gauze masks around the nose and mouth whenever in contact with patients.

Bacteriology.—The most striking feature was the frequency of streptococci, which were—(1) a long-chained streptococcus; (2) a short-chained streptococcus exhibiting a preponderance of diplococcal forces. results of nasopharnygeal swabs are given in the following table:

	Mild cases.						Severe cases.				Total.
	1	2	3	4	5	6	7	8	9	10	
Pneumococcus	+	−	−	−	+	−	−	−	+	−	3
M. catarrh. group	+	−	+	+	+	+	+	−	+	−	7
Streptococcus longus	−	+	+	−	−	+	+	+	+	+	7
Diplococcus	+	+	−	+	+	+	−	+	−	+	7
B. influenzæ	−	+	+	+	−	−	−	−	+	+	5

In their *summary* the authors insist that "infection takes place in the upper respiratory passages and involves the accessory nasal sinuses, where a septic sinusitis develops. From this, and possibly other foci as yet undetermined, the toxæmia and septicæmia originate."

The investigation was made from 1000 cases.

Macleod Yearsley.

LISTS OF ORIGINAL PAPERS.

Amer. Journ. Med. Sci., March, 1918. (Abstracted by THOMAS GUTHRIE.)

POTTENGER, F. M. (Monrovia).—"Asthma Considered in its Relationship to the Vegetative Nervous System."

Amer. Journ. Med. Sci., June, 1918. (Abstracted by THOMAS GUTHRIE.)

HUTCHESON, J. M., and BUDD, S. W. (Richmond).—"A Vaccine for the Treatment of Bronchial Asthma: Report of Twenty Cases.

Amer. Journ. Med. Sci., November, 1918. (Abstracted by J. K. MILNE DICKIE.)

JACKSON, CHEVALIER.—"A New Diagnostic Sign of Foreign Body in Trachea or Bronchi—the 'Asthmatoid Wheeze.'"