

## ABSTRACTS

### EAR.

*A Physiological Study of the Eustachian Tube and its Associated Muscles.* ARNOLD RICE RICH. (*Bulletin of Johns Hopkins Hospital*, June 1920.)

The physiological mechanism of the Eustachian tube is a matter of much controversy, but the work of the present writer will go far towards placing our knowledge of the subject on a sounder and more exact basis. By a series of careful experiments on dogs, he sought to ascertain, firstly, the physiological conditions under which the tube is open, and, secondly, the muscles which influence the patency of the tube. The tympanic membrane functionates perfectly only when the atmospheric pressure is the same on both sides of it. This equalisation of pressure is made possible by the inflow of air from the nasopharynx through the Eustachian tube into the tympanic cavity. While making sudden changes in altitude, aviators often suffer distressing difficulties referable to the ear.

Eustachius believed that the tube normally was open. Toynbee first insisted that the pharyngeal orifice normally is closed, and that it is opened during deglutition to permit an inflow of air. Swallowing with both mouth and nose closed causes a feeling of tension. If now the mouth and nose be opened a return to normal should occur immediately if the pharyngeal orifices of the tubes be always open. No such change occurs, however, until a second swallowing movement is performed with the nose open. Lucae concluded that during swallowing and phonation there occurs a closure of the mouth of the tube which is again opened when the soft palate descends. Lucae also held that the tubal orifice opens during expiration and closes during inspiration.

*Experiments.*—Dogs were used in all of the animal experiments described in Rich's paper. Operation.—Tracheotomy: both common carotid arteries ligated: mouth-gag to hold the jaws widely separated: incision through the soft palate to expose the nasopharynx. The two tubal lips are plainly seen to lie, normally, in contact, *i.e.*, the tubal orifice is normally closed when at rest. Rich found that the swallowing reflex is accompanied by a wide gaping of the tubal orifices. This is brought about by the tensor palati, which draws the membranous wall away from the cartilaginous wall, the latter undergoing no appreciable change of position. The opening of the tube is quite brief and occurs at the moment of greatest contraction of the upper pharyngeal muscles—when the hyoid bone is at the height of its

## Ear

ascent. During forced respiration the pharyngeal orifices of the tubes remain closed, even though the palate is being elevated vigorously by the levatores palati. Elevation of the palate, alone, is certainly not accompanied by an opening of the Eustachian tube. Contraction of the tensor palati muscle is the *conditio sine quâ non* of every physiological opening of the tube. Contraction of the tensor palati may occur synchronously with elevation of the palate at times other than during the swallowing, yawning, and sneezing reflexes.

It has long been believed that concussion of the tympanic membrane from loud reports is minimised by mouth-breathing, and the reason assigned has been the supposed accompanying opening of the tube. Rich's experiments, however, were all made upon animals breathing with wide-open mouths, and the tubal orifices were clearly seen to be closed. Nasopharyngoscopic observations upon human subjects also showed that there occurs no dilatation of the ostium during mouth-breathing. It was thought that perhaps the mere existence of a difference in pressure on the two sides of the tympanic membrane might be a sufficient stimulus to set in motion a reflex opening of the tube and a consequent restoration of pressure-balance. Green, in a report on the effects of descent in a diving-bell, described the actual rupture of the tympanic membrane owing to the inequality of pressure exerted upon it; this occurred especially in persons uninstructed in the method (swallowing) of restoring the pressure-balance. It was the apparent lack of such a reflex adjustment in the case of aviators which led to Rich's research. The pressure in both external auditory canals was raised greatly by means of rubber atomiser bulbs, which were sealed into the ears of anæsthetised dogs. No opening of the tubes occurred. In human subjects the tubal orifices were seen to open reflexly only during deglutition and sneezing. Further, the tubes are open during the yawning reflex for a longer period of time than during deglutition.

*Muscles which influence the Tube.*—The tensor and levator palati muscles have long been associated with the physiology of the tube. Valsalva regarded the former as a dilator of this structure. The problem is to prove that, during the act of swallowing, the tensor palati gains a fixed point below, so that the fibres arising from the membranous portion of the tube are able to dilate the tube. During deglutition the soft palate becomes this "fixed point." Other observers oppose this view. Mouret and Rouvière have stated on anatomical grounds that the levator opens the pharyngeal orifice, while the remainder of the tube is dilated by the tensor. Others considered the levator as a tubal constrictor. According to Packard, the palato-pharyngeus muscle has an auxiliary action in opening the tube. Gellé adds the superior constrictor of the pharynx to the list of muscles which have been regarded as dilators

## Abstracts

of the tube. Rich attempted to lay bare all of these muscles in the living animal by careful dissection, leaving their nerve supplies intact. By electrical stimulation of the individual muscles he determined the action of each. The integrity of the nerve supply was tested after completing the dissection by watching for the contraction of the individual muscles during the swallowing reflex. Contraction of the internal pterygoid was seen to be entirely without effect upon the pharyngeal orifice of the tube. Stimulation of the palatopharyngeus, pterygopharyngeus, and superior constrictor causes no change in the condition of the tubal orifice. Further, stimulation of the levator palati does not affect the orifice in any way. When the tensor palati is stimulated, its contraction is accompanied by a wide gaping of the pharyngeal orifice of the tube and a tension of the fibrous expansion of its tendon in the soft palate. The dilatation is clearly seen to be caused by the muscle pulling against its attachment to the membranous wall of the tube, and so drawing this portion away from the cartilaginous wall. The palatal insertion of the tensor is unessential to the dilatation of the tube, for the fibrous expansion of the tendon may be cut through in its entire extent without affecting the tubal dilatation. The attachment of the tensor to the hamular process is the only fixed point necessary. Rich divided in turn the palato-pharyngeus, the levator palati, and finally the tensor palati. The tubal orifice was widely opened during each swallowing reflex until the tensor had been cut, whereupon the reflex was no longer accompanied by the slightest opening of the tube.

It has been noted by otologists that a catheter introduced into the Eustachian tube rotates somewhat during deglutition. A long straw was introduced into the tube through the pharyngeal orifice and kymographic tracings obtained from the free end. On stimulation of the tensor palati muscle there occurred a marked deflection of the straw.

Rich's experimental conclusions were supported by nasopharyngoscopic observation of a patient who suffered from a unilateral paralysis of the tensor palati muscle following disease of the fifth nerve. The orifice of the tube on the affected side appeared somewhat more patulous than that of the normal side; during deglutition, the unaffected tube gaped normally, while the orifice on the paralysed side remained quite stationary. J. S. FRASER.

## Ear

### *A Case of Right Mastoid Suppuration causing left-sided Facial Paralysis.*

E. WATSON-WILLIAMS (*Lancet*, 1920, Vol. i., p. 1364) reports this unusual case in a woman aged 21. The radical operation on the right revealed thrombosis of the lateral sinus and internal jugular. It was followed by improvement in the left facial paralysis and ptosis, both of which disappeared in three days. The patient became delirious on the third day and died suddenly. Death was due to pulmonary embolism. There was an extradural abscess over the petrous on the right side, drained by operation. An extensive fibrino-purulent mass reached from the curve of the sigmoid sinus across the mid-line and into the left posterior fossa, completely surrounding the 3rd, 4th, and 6th nerves on both sides, and the 5th, 7th, and 8th on the left only. The bone showed no evidence of infection after stripping the dura. The left facial paralysis and its curious diminution after operation on the right side were thus explained.

MACLEOD YEARSLEY.

### *Incomplete Mastoid Operation as a Cause of Delayed Healing.*

FREDERICK THAYER HILL. (*The Laryngoscope*, 1920, Vol. xxx., p. 154.)

Hill considers five or six weeks as good time in which to get complete recovery after the simple mastoid operation. The presence of adenoids, diseased tonsils, deviated septum, and accessory sinus infection must be considered.

With regard to the types of mastoid process, Hill agrees with Politzer, who gives the following ratio: pneumatic, 37 per cent.; diploetic, 20 per cent.; diplo-pneumatic, 42 plus per cent.; sclerotic (scattering). Out of a series of 168 "simple" mastoids in which the ratio given by Politzer was pretty consistently borne out, there were sixteen cases which came to secondary operation. Of these, two were of the pneumatic type, five diploetic, and nine diplo-pneumatic. Hill states that the average aural surgeon will not consider his operation complete until he has followed out every cell. In the diploetic and diplo-pneumatic types the operator, upon reaching what he feels is sound bone, is apt to consider discretion the better part of valour and stop before completely exenterating the mastoid. Hill finds that in about 12 per cent. of the cases re-operation is necessary. Unless the mastoid is completely cleaned out we may have a condition simulating a chronic osteo-myelitis. Too many mastoid operations may be likened to sweeping a room without touching the corners. The zygoma,

## Abstracts

the cells or diploë just posterior to the external auditory meatus, the tip, and the angles between the sinus and the floor of the middle fossa and the sinus and the digastric groove, should be as thoroughly exenterated as possible. One case, at the second operation, showed an area of necrotic dura in the angle between the sinus and the middle fossa. Meningitis developed and death ensued. Post-mortem revealed a temporo-sphenoidal abscess. Three cases developed sinus thrombosis. A perisinus abscess was found in each case. In no case where the mastoid was completely exenterated was secondary operation required. It was not deemed necessary to uncover the sinus itself but simply to outline the dense bony plate covering it. The middle ear was dry in from two to five days as a rule. The method of after-treatment employed seemed of minor significance. Hill comes to the following conclusions: Early healing and uneventful convalescence depend upon thorough exenteration. Cases of delayed healing, requiring secondary operation, are met with more frequently in the diploetic and diplo-pneumatic types, where there is a persistence of the diploë or "dense mastoid mass." In such a mastoid the surgeon is apt to neglect certain areas, this oversight being less likely to occur in the cellular mastoid. The "favourite points" overlooked are: the angle between the sinus and the floor of the middle fossa, the space between the sinus and the prominence of the digastric groove, and, less frequently, the zygoma, posterior meatal wall and tip.

J. S. FRASER.

*The Bárány Tests in Tumours of the Nervus Acousticus.* HARRIS H. VAIL. (*The Laryngoscope*, 1920, xxx., p. 505.)

*Spontaneous nystagmus* was present in all ten cases, on looking upward in seven cases, when looking to one or other side in nine. Of five right-sided lesions, nystagmus to the left was greater in three cases. In the other two cases equal to right and left. Of the five left-sided lesions, in one case nystagmus to the right was greater than to the left; in one case the reverse; two cases showed only nystagmus to the left; downward nystagmus in one case.

*Spontaneous Past Pointing.*—Seven cases showed normal past pointing reactions. One case (left-sided) showed slight tendency to deviation inward of left arm. One case (left-sided) showed definite outward deviation of left arm. One case (right-sided) showed definite outward deviation of right arm.

*Rotation.*—After-nystagmus of proper type and direction was obtained in nine cases. In almost all of these the duration was less than normal, *i.e.*, about ten to twenty-four seconds. It was absent

## Ear

entirely in one case. One case showed tendency to conjugate deviation to side opposite to lesion.

*Past Pointing after Rotation.*—Three cases showed no past pointing. One case showed, when rotated to side opposite to lesion, inward pointing on the side of the lesion. No past pointing on other side. One case showed normal past pointing with absence of after-nystagmus. Diminished but otherwise normal past pointing reactions were obtained in five cases.

*Hearing.*—Absolute deafness on side of lesion in three cases. Loud voice was only heard close to ear on side affected in five cases. Conversation heard close to ear on side affected in two cases. Hearing tests were all done while continuous irrigation of opposite ear was being carried on.

*Caloric tests.*—In all the cases there was a failure to obtain after-nystagmus with cold water from vertical canal stimulation on the side of the lesion. On tilting the head 60° backward there was a failure to produce horizontal after-nystagmus. In four cases no after-nystagmus was obtained after stimulation of ear opposite to the side of the lesion with the head in the 30° forward position. In two of these cases tested with the head 60° back, a horizontal after-nystagmus was obtained. In six cases the nystagmus following irrigation of ear opposite to side of lesion appeared within one and one-half minutes. In four of these, past pointing after syringing was normal in direction but diminished in extent. In the other two cases no past pointing was present.

Two cases, with failure to produce nystagmus from caloric test of the unaffected side, were again tested after operation, and showed absence of nystagmus and past pointing reactions on the side of the lesion, with practically normal response from stimulation of the opposite side. This finding agrees with that of Eagleton (*Laryngol., Otol., and Rhinol., Section of the American Med. Assoc.*, 1917, p. 190), who recognised that increased intracranial pressure affected the side opposite to the lesion. The author thinks that the increased pressure present in all these cases is responsible to a great extent for the irregular reactions found by the rotation tests. The reactions described in the above cases are quite similar to those reported by Jones (*Equilibrium and Vertigo*, Philadelphia, 1918). Jones also states that frequently the vertical semicircular canals of side opposite to the lesion fail to respond to stimulation. This is due to pressure transmitted across the midline. Gray (*Amer. Journ. Med. Sciences*, 151 (1916), pp. 693-704) in nine cases of cerebello-pontine tumours obtained reactions similar to the above in four cases. He found absent responses in one case and doubtful responses in one other case.

J. S. FRASER.

## Abstracts

*Labyrinthine Complications in Middle Ear Suppuration.* HERBERT J. MARKS. (*Medical Journal of Australia*, 8th May 1920, Vol. i., 7th Year, No. 19, p. 429.)

Marks, in a paper read at the Congress on Diseases of the Eye, Ear, Nose, and Throat at Melbourne on 1st November 1918, says that this subject has been so fully discussed in recent works on Otology that he will deal concisely with it, his object being to invite a discussion on some points regarding which there is still considerable difference of opinion. He refers to the indications for operation, and the operation suitable for each individual case. Notwithstanding his modest objective, his paper is so full that it deserves to be read in the original. To Bárány he gives the credit of recording, in 1907, the value of the symptom of spontaneous nystagmus as a diagnostic sign in labyrinthine suppuration. Before this symptom was understood many labyrinths were unnecessarily opened up, with a high degree of mortality, when more conservative methods should have been adopted, while many cases of meningitis of labyrinthine origin were operated on too late.

We now have at our disposal recognised methods of eliciting rhythmic nystagmus of labyrinthine origin. A normal response indicates a functional labyrinth, a failure to respond, partial or complete disorganisation of the labyrinth.

The life of the patient may depend on an accurate investigation of the functions of the labyrinth. It is our duty to be on the alert for symptoms of labyrinthine involvement in acute cases of middle ear suppuration of a high degree of virulence and in chronic cases accompanied by cholesteatoma, polypus formation, and tuberculosis. A suppurating labyrinth may impair or destroy the function of the vestibular apparatus and may infect the cranial fossa. If we have formed a definite diagnosis, timely surgical interference may cut short the morbid condition. In some degree the function of the labyrinth may be preserved and intracranial invasion prevented. Labyrinthitis is rare in acute otitis media. In cases of acute otitis media the invasion of the labyrinth is generally through the oval window, in chronic cases through the external semi-circular canal.

Several classifications of labyrinthitis are given *in extenso*, but the important point to determine in an individual case is the distinction between a diffuse and a circumscribed process, and further between a purulent and serous labyrinthitis.

A radical mastoid operation is imperative in every case of labyrinthine suppuration. Functional testing before the operation and the condition of the inner tympanic wall found at the operation will determine whether we must proceed to drain the labyrinth. Clinical notes of six cases of unusual interest are given. A. J. BRADY.

## Ear

*Vestibular Vertigo of Non-suppurative Origin.* KERRISON.  
(*The Laryngoscope*, 1920, Vol. xxx., p. 626.)

Kerrison states that vestibular vertigo of non-suppurative origin must include any disturbance of equilibrium, the pathological sequence of which includes a disturbed vestibular balance. The search for an extra-aural focus of disease may lead to finding a gastro-intestinal infection, a diseased tonsil, an infected dental root, an abscess in the most distant part of the body, cerebro-spinal syphilis, nephritis, or any dyscrasia causing chemical changes in the blood, such as ptomaine poisoning. Any of these lesions, when they give rise to a disturbance of balance between the two static labyrinths, induce vertigo of vestibular type.

*Conclusions.*—Constant or semi-constant vertigo as a result of a functionally dead labyrinth is practically a clinical impossibility. The coincidence of a functionally inactive labyrinth and persistent vertigo suggest, therefore, either that (*a*) the labyrinthine lesion is potentially active and progressive, or (*b*) the vertigo is intercurrent and to be otherwise accounted for. In vertigo of purely vestibular type, relief occurs in one of two ways: (*a*) by restoration of normal nerve tone and function, or (*b*) by absolute nerve paralysis or destruction. The vestibular nerves are rather susceptible to toxic agents reaching the ears by the blood or lymph channels. Vertigo depending upon a vestibular neuritis of recent development—the cochlear mechanism escaping injury—recovers quickly when the cause is removed. In vertigo depending upon a chronic non-suppurative lesion involving the static and auditory mechanism alike, the prognosis is exceedingly uncertain, *i.e.*, the probability of recurrent attacks from slight causes is very considerable. Cases of vertigo beginning with a sudden onset give, as a rule, a distinctly more favourable prognosis than do the more indefinite types of gradual development.

The clinical details of the nine cases recorded are well worth reading in the original. J. S. FRASER.

*The Labyrinthine Reactions of Experienced Aviators.* DAVID RANKEN.  
(*Brit. Med. Journ.*, 26th June 1920.)

This investigation was undertaken in order to ascertain the difference, if any, between the labyrinthine reactions of experienced pilots and those of the average individual of the same age who had done no flying.

The rotation tests were employed, as carried out by Colonel Isaac Jones, of the American Air Force, and described in his book on "Equilibrium and Vertigo." The present writer found that in the aviator the duration of nystagmus after turning was slightly less than



## Abstracts

the normal average, and that past-pointing errors were likewise less. In pilots who had done 100 to 1000 hours in the air nystagmus lasted 23 seconds, whilst in those who had over 1000 hours to their credit the average nystagmus time was 21 seconds. The normal average is generally said to be 26 seconds. Vertigo, after turning, lasted only 12 seconds in the aviator—that is, half the time which is regarded as the normal average. The author found, however, in examining cadets for the Air Force, that the vertigo period in the normal, non-flying individual was only 15 seconds, and it would thus appear that the vertigo reaction, like those of past-pointing and nystagmus, is only slightly diminished in the aviator. The results appeared also to indicate that stimulation of the right labyrinth produces less past-pointing and vertigo, but a longer nystagmus period, than stimulation of the left labyrinth.

From his investigations the writer concludes that :

(1) Experienced pilots have, if anything, a slight tendency towards diminished labyrinthine reactions.

(2) Disturbance, past or present, of some other system of the body may affect labyrinthine reactions.

(3) Where deafness is present no medical examination of a candidate or pilot is complete without a careful investigation of the semicircular canals on both sides.

(4) In the absence of past or present aural symptoms, the routine employment of the Bárány tests is superfluous provided a thorough general medical examination is made.

DOUGLAS GUTHRIE.

*The Falling Reaction of Acrobatic Aviators.* ROBERT J. HUNTER.  
(*The Laryngoscope*, 1920, Vol. xxx., p. 312.)

To see if aviators show any change in the falling reaction, after experience in the air, Hunter stimulated the vertical canals only, as they are the ones involved in loops and tail spins and would show the most marked change, if any. For the pointing error after stimulation of the vertical canals, the back muscles are used, and the error is falling to one side. (1) Twenty-seven men who had had experience of acrobatic flying, varying from 35 to over 600 hours, were turned. Their average degree of falling was 2.9 degrees. (2) In another group of five aviators, with experience in acrobatics varying from ten to twenty hours, the average degree of falling was 6.7 degrees. (3) Eleven ground men were then examined; the average degree of falling was 20.6 degrees. Thus the difference between the experts and the untrained men was very marked, and showed that men used to air work give less response to the falling test than ordinary men. Lewis states that whirling dancers all maintain that, in spite of the fact that they have engaged in exhibitions for many

## Ear

years, they always have vertigo. These performers, when examined in the turning chair, had nystagmus of normal duration. The duration of after turning nystagmus in Army Aviators, as reported by Fisher and Babcock, and Levy, is normal. Dunlap, however, finds that nystagmus is less after repeated turning. As past pointing is entirely a voluntary act, it appears that through training, these men have learned to ignore the excessive vestibular stimuli, and sit up straight in spite of the fact that they feel that they are turning.

J. S. FRASER.

### *Mastoid Disease with Cholesteatoma Complicated by a Cerebral Abscess.*

R. GRAHAM BROWN (Brisbane). (*Med. Journ. Austr.*, 6th March 1920.)

The patient was a woman, aged 27. Since infancy she had suffered from a discharge from the left ear. She had suffered no pain in the ear till three months before she was seen by Brown. For three months the pain had been gradually getting worse, at times nearly driving her crazy.

There was no mastoid tenderness or redness. There was no bulging or redness of drum membrane. There was a "pin-head" perforation in Shrapnell's membrane. Mastoid operation: mastoid process a mere shell of bone filled with cholesteatoma. Lateral sinus exposed, fluid blood withdrawn. Roof of antrum necrosed over area of diameters 0.8 cm. by 0.6 cm.

Next day temperature 40° C., psychical aphasia; later, partial word-deafness. Cerebral abscess in second temporal convolution left side diagnosed. Blood-stained fluid, but no pus found at depth of 2.5 cm. Patient recovered.

A. J. BRADY.

### *The Treatment of Chronic Otorrhœa by Zinc Ionisation.* A. R. FRIEL. (*Lancet*, 1920, Vol. ii., p. 345.)

The author considers zinc ionisation useful. Where polypi have been dealt with subsequent ionisation will cure the discharge. He has treated ninety-nine cases, but cannot say in what proportion ionisation will effect a cure, although he "knows it is large."

MACLEOD YEARSLEY.

### *Symptomless Influenzal (Streptococcal) Mastoiditis.* F. F. MUECKE and C. GRANTHAM-HILL. (*Lancet*, 1920, Vol. ii., p. 241.)

F. F. Muecke and C. Grantham-Hill draw attention to a class of influençal mastoiditis displaying the following features: very acute earache occurring on the second or third day of a mild influençal attack. Upper part of the drum red and bulging from the beginning.

## Abstracts

Early perforation followed by unusual hæmorrhage and complete relief of all pain. Redness and swelling of the posterior meatal wall shortly after appearance of discharge. Discharge first slight, profuse the second or third day. No other symptoms. On opening the mastoid (invariably of the pneumatic type) early necrosis found, with large pus-filled cavities. Subsequent progress rapid and uneventful.

In all cases streptococci of the hæmolytic influenzal type found in large numbers.

Early recognition of these cases is highly important.

MACLEOD YEARSLEY.

### *Radium Treatment in some Cases of Eustachian Obstruction.*

G. HOLMGREN (Stockholm). (*Acta Oto-Laryngologica*, I., Fasc. I.)

The writer reports three cases of secretory middle-ear catarrh with loss of hearing, Eustachian obstruction, and fluid exudation in the tympanic cavity, all of which had failed to clear up as a result of repeated catheter inflation. The ear condition in the first was due to the presence of a sarcoma immediately behind the Eustachian opening. In the second case there was present a diffuse thickening of the lining membrane of the nasopharynx, which on microscopic examination was reported also to be sarcomatous, but of the correctness of this diagnosis the author is doubtful. The third case showed no obvious nasopharyngeal lesion, but it was assumed that the Eustachian blocking was due to swelling of the tubal tonsil. In each of the cases the ear trouble cleared up completely and permanently after a single treatment by the application of radium to the nasopharynx.

Lymphoid tissue in all parts of the body is especially sensitive to radium, but the writer believes that these three cases are the first in which this fact has been made use of in the treatment of ear conditions. He considers that radium will in the future prove to be of great value in dealing with cases of this nature.

THOMAS GUTHRIE.

## MISCELLANEOUS.

### *Deep Cervical Abscess and Thrombosis of the Internal Jugular Vein.*

HARRIS P. MOSHER. (*The Laryngoscope*, 1920, xxx., p. 365.)

Mosher records the case of a male, aged 26, suffering from general septicæmia, who three weeks before had had a retropharyngeal abscess opened. Examination showed a small retropharyngeal swelling on the right side. There was some swelling of the neck and tenderness about the middle of the sterno-mastoid. The chart was violently septic, 94 to 107. Blood cultures had been twice negative. Greene incised the retropharyngeal swelling and evacuated a considerable

## Miscellaneous

quantity of pus. Next day obstinate hiccough was present and the swelling of the neck increased. Mosher suspected the possibility of thrombosis of the internal jugular vein. At the second operation the carotid artery presented within the sheath but not the vein. On working outward the blunt dissector fell into a large foul abscess cavity. The vein could not be recognised, but over the vagus there was a strip of tissue like a thrombosed vein. At this point the patient stopped breathing and died. The pathological report stated that the thickened tissue was probably disorganised and thrombosed vein. A similar case was reported by Goldman in the *Annals of Otology*, June 1917. In Goldman's case the symptoms pointing to thrombosis began five days after an attack of acute tonsillitis. Blood cultures were sterile. The thrombosis of the vein was not extensive, occurring only at the junction of the facial vein. The patient recovered. Mosher goes very fully into the anatomy of the pharyngomaxillary fossa. An otitic perisinus abscess is watched knife in hand. This should be the rule in deep cervical abscess. At the first sign of a septic temperature, or chill, the vein should be excised. The case should not be labelled septicæmia, and our surgery confined to the taking of blood cultures. Infection can reach the vein from the tonsil just as readily as from the middle ear.

J. S. FRASER.

*Röntgenological Determination of Pulmonary Tuberculosis.* F. E. DIEMER and I. H. CRAMER. (*Amer. Journ. Med. Sci.*, December 1919.)

This paper is founded on the examination, clinical and radiosopic, of some 600 cases of pulmonary tuberculosis at a military camp. Especial attention was devoted to a correlation of the physical and X-ray findings. The authors reach the following main conclusions:—

(1) The definite determination of pulmonary tuberculosis by means of the X-rays alone is possible in practically every stage of the disease. The stage and activity of the process are less certainly established by X-rays alone than by physical examination alone, but a combination of both is decidedly more reliable than either alone.

(2) The stage of excavation is readily determined.

(3) Certain X-ray findings are definitely pathognomonic of pulmonary tuberculosis.

(4) The exact area of involvement is more readily made out by X-ray examination than by other clinical methods, but the latter are of more assistance in regard to prognosis.

(5) When cavitation is present, the extent and activity of the process can hardly be estimated without the Röntgen rays.

(6) X-ray examination is indispensable in treatment by artificial

## Abstracts

pneumothorax. X-ray study indicates when lung collapse goes on to lung compression, and the amount of pressure necessary to separate the adhesions.  
THOMAS GUTHRIE.

*Complete Bilateral Spastic Paralysis of Face, Jaw, Tongue, and Larynx, following an Acute Illness.* JAMES COLLIER. (*Proc. Roy. Soc. Med.*, Section of Neurology, January 1920, p. 47.)

A girl, aged 10, was in every way healthy and normal until 6 years of age, when she contracted scarlet fever. Three weeks later, when convalescent from the scarlet fever, she acquired meningitis. She developed a squint, became unconscious, and lay semi-conscious for three weeks. Her limbs were not paralysed during this time. She has never been able to speak nor to move her face voluntarily, nor to eat nor swallow naturally since regaining consciousness. She is a very intelligent child, and writes well. With the exception of slight perversity of movement in the use of the fingers, the condition of the limbs and trunk are in every way normal. Ocular movements are normal. With the exception of retraction of the angles of the mouth there is no volitional movement of the face, jaw, tongue, or larynx. The face is in spasm. The teeth are lightly clenched, and the masseters are in spasm. There is much dribbling of saliva. She feeds by pressing soft food into her cheek with her finger, closing the oral aperture with the hand, and squeezing it through the teeth by the pressure of her fingers upon the cheek. Reflex swallowing is normal. The emotional movements of the face in smiling and crying are normal, and during these movements only is the mouth opened. She makes no attempt at articulation. She has recently begun to use a slight laryngeal grunt as a query and as an affirmative.

ARCHER RYLAND.

*Hydrochloric Acid Poisoning with Sloughing of Part of the Œsophagus.*  
J. BURTON CLELAND. (*Med. Journ. Austr.*, 21st February 1920.)

This is the history of a case where gross distinctive lesions followed the above cause, yet for a time the patient had relatively little local inconvenience. He died five months later after gastrostomy, performed because the œsophagus could not be dilated so that food could be swallowed.  
A. J. BRADY.

*The Cleft Palate Speech.* C. MACMAHON. (*Brit. Dental Journ.*, 1st September 1920.)

This short paper deals with the education of patients after operation, and gives precise instruction for the production of the more difficult letters such as K, G, D, T, and S. A number of useful test sentences are included.  
DOUGLAS GUTHRIE.

## Miscellaneous

*The Incidence of Nose, Throat, and Ear Disease among Aviation Candidates.* D. RANKEN. (*Lancet*, 1920, I., 800.)

A most instructive and thought-compelling paper. Three tables are given, analysing nose, throat, and ear defects of 5000 aviation candidates, showing the incidence of chronic suppurative otitis media and hearing defects in 47,069 candidates, and the incidence of the same conditions in 1500 rejected candidates. A calculation based upon the figures given shows that aural disease appears seriously to affect 2.8 per cent. of the young men of the middle classes. The obvious conclusion is "that much remains to be done before the amount of nose, throat, and ear disease affecting the youth of this country can be said to have been brought down to a negligible factor or an irreducible minimum."

MACLEOD YEARSLEY.

*Report of the Committee on the Advantages and Disadvantages of the Various Local Anæsthetics in Nose and Throat Work.* Dr EMIL MAYER, Chairman. (*The Laryngoscope*, 1920, xxx., p. 443.)

The entire report refers to adults only. The ideal anæsthetic having the effects of cocain and absolutely non-toxic has not been found. Novocaine ( $\frac{1}{2}$  to 1 per cent.) appears to be the most popular local anæsthetic for injection.

*Summary* (abridged).—None of the synthetic products equals cocain in its local effect when applied to the mucous membrane. Synthetic products may be freely injected if this is done slowly. Fatalities either occur immediately or not at all. The greatest danger lies in too rapid injection or in entering a vein. Idiosyncrasy does exist. Local anæsthesia is undoubtedly the choice of methods by all American rhinologists in nose operations. It is also the choice of a very large proportion in throat operations. A small number believe that tonsil operations particularly are best performed under general anæsthesia. The dangers of hemorrhage during tonsil operations under local anæsthesia are no greater than under general. There is no greater danger from post-operative hemorrhage under local than under general anæsthesia.

*Suggestions.*—All operations should be performed with the patient recumbent, beginning with the first application of the local anæsthetic, except in sinus operations, where the head and shoulders may be elevated. Each operation to be preceded by a hypodermic injection of morphia and atropin and the patient kept in hospital. In nose operations, adrenalin should be applied first, followed by cocain. The injection of the synthetic drug should be carried out slowly. Where there may be a suspicion of possible danger (cardiac disease, Basedow, or other disturbances of internal secretion), one-fourth of

## Reviews of Books

the amount of anæsthetic to be used should be applied, and the patient watched for possible toxic effects.

*Recommendations.*—A permanent committee on "Toxicity following Local Anæsthesia" should be formed. Reports of fatalities should be promptly reported to the Secretary for further study by the Committee. The Committee further recommends that a change be made from the old method of introducing new local anæsthetics—clinical data furnished by medical men chosen by the manufacturer. Such investigation should be made by clinicians chosen by the Committee. A fund should be placed in the hands of the Therapeutic Research Committee to reimburse the physicians making these studies. They recommend the use of the soluble tablets of cocain for making the fresh solution as required.

J. S. FRASER.

## REVIEWS OF BOOKS

*Diseases of the Throat, Nose, and Ear.* By DAN M'KENZIE, M.D., F.R.C.S.E. (Wm. Heinemann, Ltd., London, 1920.)

It is a matter for congratulation that a man of Dr Dan M'Kenzie's standing has been able to gather together the fruits of his long experience in the specialty and to place them so successfully at the disposal of his fellows in the profession. As is stated in the preface, the book has been written from the practical point of view, and considerable attention has been devoted to operative surgery. It is not stated to which class of reader the work is intended specially to appeal. While points of academic interest and details of technique are not unduly dwelt upon, there is much that renders the book worthy of perusal by the specialist. The ordinary practitioner will find that here is a book which gives him a broad and properly focussed view of the subject without inflicting on him minutæ in which he has no interest. The illustrations are good and of real instructional value. They are not, as is so often the case in works of this nature, simply a series of copies from an instrument maker's catalogue. One wonders whether the value of the book would not have been enhanced by an even more free use of diagrams.

The dictum that paralysis appearing after a sore throat of any kind means that the disease has been diphtheria may meet with criticism from some who have in mind cases of influenza which have been followed by paralysis. Dr M'Kenzie urges the removal of the tonsils in all cases of tuberculosis of the cervical glands. Dealing with syphilitic disease of the pharynx, he gives a short but useful résumé of the modern treatment of syphilis in general.