ABSTRACTS.

Abstracts Editor—W. DOUGLAS HARMER, 9, Park Crescent, London, W.1.

Authors of Original Communications on Oto-laryngology in other Journals are invited to send a copy, or two reprints, to the JOURNAL OF LARYNGOLOGY. *If they are willing, at the same time, to submit their own abstract (in English, French, Italian or German) it will be welcomed.*

NOSE.

Ozæna.—Matthew S. Ersner. "The Laryngoscope," January, 1919, p. 22.

Ersner has prepared a polyvalent vaccine consisting of eleven strains of the Friedländer organism. (He discontinued the search for the coccobacillus of Perez, Hofer and Kofler.) The results obtained with Friedländer vaccines were gratifying but not entirely satisfactory, for the improvement was only temporary. Schatz and Ersner treated sixteen patients. Nine patients responded to treatment, one made a complete recovery, another was symptomatically cured, seven recurred, and the remaining seven did not respond to treatment. In only two smears did Ersner find the acid-fast organism (tubercle bacillus?) described by Dan McKenzie. Ersner holds that we cannot lay much stress upon the acid-resisting organisms found, because the crusts present in the nasal chambers are very good breeding-places for the saprophytic organisms. Only two "Wassermanns" of the sixteen were positive, and these belonged to the group that did not respond to the vaccine.

Ersner thought that ozæna might be due to some food dyscrasia. The following proteids were therefore employed: casein, egg, beef, mutton, pork, fish, oysters, wheat, oatmeal, rice, barley, tomato and strawberries. The protein was extracted by the use of a weak alkali, and after shaking and incubating was filtered. Absolute alcohol was then added, and the solution evaporated in a water-bath. A saturated solution of the dry material was made in an alkalinised sodium chloride solution. The endermic method of injecting the proteins was employed. All ozæna cases were, however, negative. *J. S. Fraser.*

Ozæna Vaccines.—Harry A. Schatz. "The Laryngoscope," January, 1919, p. 17.

Schatz has employed the inoculation method of Hofer as described by Guggenheim. The rabbits failed to develop nasal symptoms, nor did any die except after weeks of illness and emaciation. Those that died exhibited no pathological intranasal condition, nor did Schatz obtain the Perez organism from the heart's blood. As readers of the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY know, McGowan has expressed the view that the rabbits employed by Hofer and others may have been suffering from distemper, hence these observers obtained cultures of the *Bacillus bronchisepticus*—an organism resembling the coccobacillus of Perez in almost every particular. Horn, who began vaccine work with Hofer's cultures, obtained poor or indifferent results in his earlier efforts. Murray and Larson had similar experiences. Horn has expressed agreement with Perez that the *Bacillus fœtidus ozænæ*, or "*B. rhinosepticus*," is the primary ætiologic factor, while the *B. Friedländer* is a secondary invader. The *B. rhinosepticus* gives improvement in all cases, but cures are rare. *J. S. Fraser.*

Parosmia.—William H. Dudley. "The Laryngoscope," March, 1919, p. 156.

Dudley states that any physical disturbance of any of the nerves of special sense does not result in pain, as does a like disturbance of a nerve of ordinary sensation, but instead in a perversion of the usual function, and this of a disagreeable nature. When abnormal odours fasten themselves on our organ of smell, some disturbance in some portion of the olfactory apparatus must have taken place. Cases of parosmia may be divided into two classes: (1) The endogenous, in which the disturbance may be caused by a reflex from an inflammatory state of some neighbouring organ, inflammation of the olfactory nerve itself, pressure on, or destruction of, the olfactory nerve or its cerebral centre, or disturbance of nutrition of the nerve as in arterio-sclerosis. (2) The exogenous form is rare. It appears to consist of some quite vigorous impression by a decidedly penetrating odour upon the olfactory nerve in an especially susceptible individual. Robertson has reported the case of a woman, aged fifty, who one week after an operation for cataract suffered from iridochoroiditis. One morning she complained that she was suffering from a most intolerable noisome stench. It was worse than all conceivable bad odours combined in one. Robertson regarded it as a subjective sensation referable to a reflex excitation of the olfactory nerve, aroused by irritation of the ciliary nerves consequent upon the inflammation. A hypodermic of morphia put the patient to sleep, and when she awoke the smell was gone. Wood has reported a glioma of the frontal lobe and olfactory bulbs with hallucinations of smell. As an epileptic aura parosmia is occasionally met with, but among the insane and hysterical it is quite rare. Campbell Thompson relates a case, one of the annoying symptoms of which was an unpleasant smell. Autopsy revealed a large abscess in the fore-part of the temporo-sphenoidal lobe—the cerebral centre for olfaction. *J. S. Fraser.*

LARYNX.

Ankylosis of the Crico-arytænoid Joint.—Thomas J. Harris. "The Laryngoscope," March, 1919, p. 139.

Harris states that ankylosis of the crico-arytænoid joint is a more common affection than is generally supposed. In its acute form it is often overlooked, and in the chronic form is often mistaken for recurrent nerve paralysis. Bilateral ankylosis is a far rarer occurrence, and, if the cords are fixed in the median line, is fraught with grave consequences to the life of the patient.

Female, aged fifty-four. Hoarseness for nine months. Later and very gradually she began to have some difficulty in breathing. Examination showed the left vocal cord motionless and in the median line. The arytænoid cartilages and the arytæno-epiglottic fold on both sides and the false cords were distinctly swollen. The right vocal cord also showed impaired movement. On account of the possibilities of an acute œdema the patient was advised to come into the hospital. A high tracheotomy under local anæsthesia was performed. Blood and spinal fluid gave a negative Wassermann; X-ray of the chest showed no neoplasm or aneurysm. X-rays of the teeth showed a dental abscess; extraction of the diseased tooth followed. The patient complained of an acute arthritis involving the knee-joints, which soon subsided. It was determined to attempt gradual dilatation by means of specially

constructed intubation tubes, but without success. Removal of one or both cords was taken under careful consideration, but decided against in view of the laryngoscopic picture which had now showed itself. Both cords were seen lying in the median line with only a narrow slit between them. So far the causation of the bilateral lesion has not been cleared up. *J. S. Fraser.*

Early Training of Defective Speech.—Mary Summers Steel. "The Laryngoscope," March, 1919, p. 160.

The majority of the cases in the "defective speech" clinic are sent from the schools, but the best time for correction of the defects would be before the child is embarrassed by the inability to speak correctly. In the home life members of the family learn to understand the imperfect attempts to put thoughts into language. If strangers arrive these children retire to the background. They later become absorbed in silent reading and so learn to think faster than they can produce the words. When the time comes for school little attempt is made by their teachers to understand articulation which deviates from the normal, or to be patient with the stammerer. Good speech is the result of the co-ordination of the peripheral with the central speech mechanism, and each case must be carefully studied to ascertain which of these mechanisms is not performing its functions. *J. S. Fraser.*

EAR.

The Bárány Tests in Pathologic Cases.—Lewis Fisher. "The Laryngoscope," October, 1918, p. 724.

This paper is of great interest and importance. The first question in any given case is whether we are dealing with a functional or an organic condition. If all responses to ear-stimulation are perfectly normal a functional condition may be suspected. A definite impairment of even one response shows that we are dealing with an organic lesion. Our next problem is to determine whether the case is one of peripheral or central lesion. Many cases of cerebellar lesion or tumours of the cerebello-pontine angle present symptoms similar to those observed in an affection of the labyrinth and *vice versâ*. In a peripheral lesion *all* the responses are impaired, and conversely the presence of any *one normal* response to stimulation indicates a normal labyrinth and eighth nerve. If the findings lead to the conclusion that the lesion is central the simplest method of procedure is that of elimination. We begin with the labyrinth and proceed brainward, considering each structure by itself. (1) With good hearing and one or more normal responses from the static-kinetic portion of the labyrinth, the labyrinth itself and eighth nerve are to be considered uninvolved. (2) For information relative to the condition of the medulla oblongata and *inferior* cerebellar peduncles we examine the responses obtained on stimulation of each horizontal canal *separately*. This test is performed by tilting the head back sixty degrees after douching. If this produces normal horizontal nystagmus and vertigo with past-pointing and falling, the medulla oblongata and inferior cerebellar peduncle of that side may be considered uninvolved. (3) To determine the integrity of the pons we examine the responses obtained from stimulating the vertical semicircular canals. These are tested when the ear is douched with the head thirty degrees forward—the so-called

"upright" position. If a normal rotary nystagmus results with vertigo, past-pointing and falling, it suggests uninvolved pathways in the pons and middle cerebellar peduncle of the side douched. (4) The cerebellum is considered as not the seat of any gross lesion, if stimulation of either ear or any canal produces past-pointing of both arms in both directions. (5) When the tests of *all* the semicircular canals of both sides produce impaired or absent vertigo, it is reasonable to suppose that there is *one* lesion located at a point where *all* the fibres concerned in vestibular vertigo come together, *i. e.* the decussation of the superior cerebellar peduncles. (6) With no responses at all from the right ear and an absence of response from the vertical canals of the left ear, it is reasonable to explain the whole "phenomenon-complex" by one lesion in the right cerebello-pontine angle, where an involvement of the right eighth nerve would produce no response from the right labyrinth, and by pressure against the brain-stem would interfere with the responses from the vertical canals of the opposite side.

Examples.—(*a*) If stimulation of the right ear produces no nystagmus, vertigo, past-pointing or falling, there is obviously a destruction of the labyrinth or eighth nerve. We would, of course, have complete deafness of this ear. (*b*) Stimulation of the right horizontal canal produces—nystagmus, none; vertigo, normal; past-pointing, normal; falling, normal; this suggests a lesion in the medulla oblongata between Deiters' nucleus and the posterior longitudinal bundle on the right side. (*c*) When stimulation of the right horizontal canal produces—nystagmus, normal; vertigo, none; past-pointing, none; falling, none, it suggests a lesion of the right inferior cerebellar peduncle. (*d*) When stimulation of the right vertical canal produces—nystagmus, none; vertigo, normal; past-pointing, normal; falling, normal, it suggests a lesion in the posterior portion of the pons near the posterior longitudinal bundle on the right side. (*e*) When stimulation of the right vertical canal produces—nystagmus, normal; vertigo, none; past-pointing, none; falling, none, it suggests a lesion of the right cerebellar peduncle. (*f*) When stimulation of *all* canals of *both* ears produces—nystagmus, none; vertigo, normal; past-pointing, normal; falling, normal, it suggests a lesion of the posterior longitudinal bundles themselves. (*g*) When stimulation of *all* canals on the right side produces—nystagmus, normal; vertigo, none; past-pointing, none; falling, none, it suggests a lesion of the cerebellar vestibular nuclei of the right side. (*h*) When stimulation of *all* the semicircular canals of *both* ears produces—nystagmus, normal; vertigo, none; past-pointing, none; falling, none, it suggests a lesion at the base of the cerebral crura at the point of decussation of the two superior cerebellar peduncles. (*i*) When right ear is totally deaf and stimulation of its semicircular canals produces—nystagmus, none; vertigo, none; past-pointing, none; falling, none; and stimulation of the left horizontal semicircular canal produces the only normal reactions on that side, the lesion is located in the right cerebello-pontine angle.

Fisher admits that, when confronted with actual pathologic cases of intracranial involvement, the findings may be obscured by pressure-phenomena. *J. S. Fraser.*

Tests for Malingering.—Kerrison. "The Laryngoscope," September, 1918, p. 662.

Kerrison states that there has been some evidence that a certain number of malingerers have been previously coached as to the tests to

be employed and the reactions which should be assumed. It is important in dealing with suspected malingerers to give no hint that they are in any way under suspicion. The most glaring evidences of deception should pass without comment until the examination is completed. Complete bilateral deafness is rarely, if ever, claimed. Two types of unilateral deafness are assumed, *i. e.* (1) deafness advanced, but not complete; and (2) absolute deafness.

Method: Only one registrant (recruit) at a time is admitted to the room. Preliminary testing of the sound ear is essential to a proper *interpretation of tests to be applied later. Weber's test: Apply a vibrating tuning-fork (C256) to the vertex of his skull. If he refers* the sound to his supposedly deaf ear, Kerrison is favourably impressed as to his probable honesty. *Loud voice test:* The eyes are now blindfolded and the recruit closes with his finger his better ear. The examiner repeats words and numbers to him at first in low voice and then in progressively louder and louder tones. If, when one has reached a pitch at which he should be able to hear the words with the sound ear even though tightly occluded, he still states he cannot hear, one knows at least that he is an intentional malingerer. This test will expose many malingerers. *Stethoscope test:* The ordinary binaural stethoscope with funnel-shaped chest-piece is used. One ear-piece is completed occluded with wax. Standing behind the registrant the stethoscope is adjusted with the occluded ear-piece to his "deaf" ear. Words in a low whisper are spoken into the funnel-shaped chest-piece, which naturally he should hear perfectly. The stethoscope is then replaced, the occluded ear-piece being this time placed in his sound ear. If he is able to hear now approximately as well as before, we have fairly sound evidence that his deafness is either assumed or grossly exaggerated. *Tests eliciting contradictory responses:* The registrant's eyes are now uncovered, the sound or better ear is closed with a finger, and the "deaf" ear is subjected rapidly to the commoner classical tests, *e. g.* hearing distances for watch, acoumeter, whisper or conversational voice, tuning-fork tests to determine lower tone range, etc. His responses are carefully noted. Following this he is again blindfolded, and the same tests are repeated many times, fairly rapidly and in varying order. If he is a malingerer, his responses will almost surely demonstrate incongruous and contradictory variations. *Lombard's test:* This depends upon the fact that to the normal man the sound of his own voice is necessary to the proper regulation of its tone and intensity. The noise apparatus is adjusted in the sound ear and its machinery started in order to accustom him to its grating noise. He is given a book and told to read aloud in his natural voice and not to stop reading when the noise instrument is set in action. As soon as the noise begins, a man whose opposite ear is profoundly deaf will at once raise his voice, and if his deafness is absolute he may literally shout. The malingerer, on the other hand, claiming a one-sided deafness which is not real will continue to read in an even tone or in a tone only slightly elevated. *N.B.*—This is a test which a malingerer who has been coached may easily turn to his advantage. *J. S. Fraser.*

Sound Perception in Deaf-mutes.—John D. Wright. "Med. Times," April, 1918.

In a large number of cases classed as deaf-mutes the perception of sound is to a certain extent retained. This vestige of hearing is too feeble to enable the child to acquire speech in the ordinary manner, yet it is

sufficient to convey to the brain the impressions of speech when the sounds originate near the ear and are loud and distinct. A child with slight sound-perception may be taught to speak when the sounds which he is to imitate are uttered close to the ear and if he is able to watch the face of his teacher part of the time in a mirror. He is not taught entirely with the aid of a mirror, but is taught to differentiate sounds without the mirror first of all to enable him to concentrate all his faculties on the training of what hearing power he has. The mirror is used to allow him to imitate the speech organs during the production of the sounds.

In a large proportion of deaf-mutes such sound-perception as remains is not sufficiently utilised in speech training, and those patients are educated by lip-reading when they might at the same time be taught to hear voice spoken into the ear.

As the normal period for the learning of speech is from infancy to five years of age, it is advisable to begin early with this part of their training.

J. K. Milne Dickie.

Modification in the Treatment of Intracranial Complications of Otites. Temporal and Occipital Trephining.—Henri Aboulker (Algiers). "Rev. de Laryngol., d'Otol., et de Rhinol.," March 15, 1919.

The author begins by quoting cases illustrative of the well-known difficulty in diagnosing as to precisely what complication or complications exist, although it may be evident that there is pus in the skull. He then proceeds to show that in certain cases a serous meningitis, producing a raised intracranial pressure, may cause a slowing of the pulse, mental torpor and headache very similar to the symptoms of cerebral abscess. Leaving the pulse out of the discussion, there is in these two conditions a marked difference in the mentality, and in particular to the psychical realisation of, and reaction to, the headache. In cerebral abscess there certainly exists profound and terrible headache, but the patient does not complain of it continually. On questioning him, it is obvious that the headache is violent, but he never cries, rarely complains. The surgeon is obliged to ask searching questions to elicit a statement on the point.

By contrast, in serous aseptic meningitis, the patient, whether he utters the typical cry or not, never allows anyone to forget for long that he is in agony with headache. The author considers that the clouding of cerebration is the most important diagnostic factor—more important than the optic discs or the temperature chart. Septic meningitis is not discussed, beyond mentioning that the pulse, pyrexia, photophobia, cerebro-spinal fluid and Kernig's sign constitute a symptom-complex which is easily diagnosed from the other two above-mentioned conditions. Proceeding now to the question of the route for operative access, the author considers that the value of the stereotyped trans-mastoid route is discounted by this grave disability: that inasmuch as the diagnosis between aseptic serous meningitis and cerebral abscess is difficult, the operator may find he has opened a subarachnoid space, and exposed a brain, which are not infected. And he has done so by traversing the cavity of a mastoid exenteration which is certainly infected. The author strongly advocates the temporal route for the cerebrum and the occipital for the cerebellum.

The author relates illustrative cases, and definitely claims that these routes give the patient a better chance of recovery.

H. Lawson Whale.

The Aurist and Lip-reading.—Emma B. Kessler. "The Laryngoscope," March, 1919, p. 163.

Kessler states that three months after the war began in Europe, Germany provided classes in lip-reading. Within a short time, three deafened soldiers, two lawyers and one teacher, were enabled to follow their regular vocations through such instruction. Among fifteen persons interrogated by Kessler, who are more or less deaf, and who have become enthusiastic lip-readers, only three had heard of speech-reading through their aurist. The others obtained their information from friends or newspapers. Many of the ills of deafness could be prevented if lip-reading were prescribed to the *slightly deaf* before their deafness becomes a source of embarrassment. Few people cease seeking remedies even after it has been ascertained that medical help cannot restore the hearing. Most patients spend time and money on nostrums, which do no good, with the result that they finally assume the attitude that nothing is worth while. They can then hardly be persuaded to rouse themselves sufficiently to study lip-reading. When the deaf man realises that he can again understand the quietly spoken word his attitude towards life is changed. *J. S. Fraser.*

Central Deafness.—E. R. Carpenter. "The Laryngoscope," January, 1919, p. 25.

The author records the case of a female, aged twenty-three, who had typhoid fever and five attacks of pneumonia between the ages of eleven and sixteen. For seven years she has had indigestion and dizziness, with numbness of the left leg, arm and left side of the face. Two years ago there was an abscess in the left ear and infection of the right frontal sinus. Hearing never returned to normal. One year ago she developed severe headaches and rapidly-increasing deafness in both ears. Examination: Romberg test positive, co-ordination poor, marked ataxia. No aphasia. Slight Babinski on left side. No hemianopsia. Loss of smell on the right side. No sense of taste over the anterior two-thirds of the tongue. Left corneal reflex absent. There was only a scar in the anterior part of the left drum. Right ear—conversation was $\frac{2}{40}$; left ear—conversation $\frac{1}{40}$. Rinne positive in both ears. Vestibular tests revealed spontaneous nystagmus when she looked up or down. She fell to the right. Turning reactions were almost normal, except for prolonged vertigo when turned to the left, head backward. Caloric reactions: Right ear—there was nystagmus from the vertical canal only when she looked to the left. Left ear—vertigo was greatly exaggerated and prolonged from the vertical canal. Wassermann negative. After two months' treatment with mercury and iodides the patient had convulsions, projectile vomiting and papillitis. She suddenly became deaf in the left ear. Paralysis of the left side of the face and left leg and increased numbness of the left arm came on. Six weeks after the onset of the paralysis the left ear began to discharge pus and blood. After one week she was greatly improved and was soon herself again.

Carpenter calls attention to the bilateral pons symptoms. On the left side the fifth nerve, the vertical semicircular canal fibres and the auditory tract were implicated. On the right side the pyramidal tract, the lemniscus and the auditory tract were involved. The vertical nystagmus also indicated pons trouble. The exaggerated past-pointing reaction on the left side suggests pressure-irritation to the cerebro-cerebellar motor fibres in the pons. Carpenter holds that the case was

one of a left-sided basilar abscess, possibly a temporo-sphenoidal lobe abscess, pressing against the root of the left fifth nerve, with contra-lateral pressure. *J. S. Fraser.*

Vestibular Reactions in Central Nervous Diseases.—George H. Willicutt. "The Laryngoscope," March, 1919, p. 145.

The following records are of interest because they show how the modern methods of investigating the vestibular apparatus are being used in America to investigate obscure nerve cases associated with giddiness:

Case 1.—Female, aged thirty, suffered from weakness of the lower limbs and headaches for one month. Present trouble began March 22, 1914, with a severe epistaxis. On March 23 the patient had an attack of vertigo, and during this day had eight to ten attacks in all. In the evening she suddenly became deaf in the right ear. On the following day vertigo developed to such a degree that the patient vomited several times, and was confined to bed. She found that the attacks were lessened by lying on the right side, and that they were more severe when the room was darkened. She had no pain, but marked tinnitus. Examination showed both ear-drums normal. Right ear, complete deafness; left ear, normal. Weber lateralised to left. Spontaneous nystagmus, rotary to the right and to the left; looking up *or* down produced a vertical nystagmus *upwards*. No disturbances of equilibrium. Spontaneous pointing tests normal. Turning to the right produced horizontal nystagmus to the left of 33 seconds' duration, but *no* vertigo. Turning to the left produced horizontal nystagmus to right for 35 seconds, and *no* vertigo. Caloric tests: Typical reaction on both sides, after 2 minutes. Otological diagnosis: Retro-labyrinthine lesion.

Neurological report: "Wassermann negative; intention tremor of both hands; speech slow; tactile anæsthesia in lower extremities, but no ataxia present; increased knee-jerks; Babinski present; suspicion of beginning optic atrophy. Diagnosis: Early multiple sclerosis."

Case 2.—Male, aged twenty-four. For four weeks has had greatly diminished hearing in both ears, which came on suddenly with a great roaring; severe dizziness during this attack, and has had repeated attacks since. Otoscopic examination normal. With right ear he can hear only a shout; left ear, conversational voice at 30 cm. Bone-conduction: Right ear, *nil*. Spontaneous nystagmus to right only. No Rombergism. Turning to right produced very slight nystagmus and no vertigo; turning to left produced nystagmus to right for 25 seconds and vertigo. Caloric tests: Left ear, very slight reaction after 4 minutes, the pointing error *absent;* right ear, typical reaction. Otological diagnosis: Neuritis of the eighth nerves involving especially the right cochlear branch and left vestibular branch.

Neurological examination: "Wassermann negative; paræsthesia of both hands; scoliosis in the dorso-lumbar region. Diagnosis: Syringomyelia (latent type)." *J. S. Fraser.*

Cerebral Abscess of Otitic Origin with Aseptic Meningitis.—Fournioux. "Revue de Laryngologie," April 30, 1919.

Patient admitted April 22, 1918, with acute right mastoiditis. Temperature 39·7° C. Pain severe. Prostration, nausea, clouding of intellect. On April 23 marked signs of meningitis.

April 24: Mastoid operation. Dura of middle fossa and lateral sinus exposed and of normal appearance, but no pulsation. Foul granulations in antrum and aditus.

April 25: Meningitic symptoms better, but pulse only 56.

May 3: Headache again severe. Neck stiffness. Kernig.

May 5: Temperature 37·8° C.; pulse 48. Semicomatose. Operation. Large exposure of dura of middle fossa, which was of normal appearance, and showed no pulsation. No sign of any bony lesion to show track of infection. Brain explored with trocar and large temporo-sphenoidal abscess opened.

May 7: Great improvement. Cerebro-spinal fluid turbid. Excess of albumen. Culture negative.

Recovery uneventful. *J. K. Milne Dickie.*

Injuries of the External Auditory Canal resulting from Projectiles.—Franklin E. Cutler. "The Laryngoscope," February, 1919, p. 82.

The smooth penetrating bullet-wound which injures the cartilaginous-membranous canal at its external end heals frequently without stenosis of the canal. The nearer the wounds are to the bony meatus the more apt they are to result in stenosis or atresia. Wounds of the canal are nearly always accompanied by splinter fractures. After the splinter comes away, in the course of a prolonged suppurative process, we meet with greater or lesser stenosis. In nearly all of these wounds there is injury to the temporo-maxillary articulation—a most unpleasant complication. The facial nerve is injured in an astonishing number. X-ray examination shows pieces of metal of all sizes and shapes, but it is not so satisfactory in demonstrating the finer splintering of bone. One must not lose sight of the fact that other injuries of the ear may exist, such as rupture of the drum with middle-ear suppuration; fracture or fissure of the pyramid with more or less serious injury of the labyrinth. Damage of the labyrinth occurs in a large percentage of skull and face injuries.

Separation of the cartilaginous-membranous from the bony canal is especially interesting. The bullet in passing dissects the cartilaginous from the bony wall, and on otoscopy we find a semilunar granulating ridge, springing from the floor and anterior wall and projecting prominently into the lumen of the canal. The result of these injuries in the absence of treatment is stenosis or complete atresia. Treatment may be conservative or operative. In recent cases tamponage is indicated. In old cases already stenosed Cutler recommends laminaria tents. These can be thoroughly sterilised by boiling for ten minutes without destroying their usefulness. It is necessary from time to time to intermit this treatment, but the applications must be continued until granulations are covered with epithelium. Even then the patient must be kept under observation. The treatment of splintering of the bony meatus consists in carefully removing the loose and visible splinters. One should always be on the look-out for further splinters. The treatment of complete atresia is operative only. Several methods have been attempted. (1) Excision of the scar with Thiersch skin-graft. (2) Crucial incision forming four triangular flaps which are pushed inward. (3) Excision of the scar and covering the denuded area with skin-flaps from the vicinity. Ruttin's operation consists in cutting through the external ear at its basilar attachment and removing the scar-tissue, taking a skin-flap from the mastoid process and drawing it through the incision so that it forms the posterior wall of the meatus. Granulations of the other walls can be held in check with tamponage until the epidermisation is completed.

J. S. Fraser.

Congenital Fistula of Ear.—Fournier. "Revue de Laryngologie," April 15, 1919.

A case with a fistula commencing at the attachment of the helix and running down through the parotid to the angle of the jaw, where the lower end opened. History of occasional abscesses.

J. K. Milne Dickie.

Ear Protectors.—Charles W. Richardson. "The Laryngoscope," July, 1918, p. 514.

Of the four protectors tested, the "British Tommy" proves to be the best. Soldiers are in the habit of using cotton-wool as a protector, but this is efficient only when moistened with glycerine or vaseline. It deafens the wearer more than the "Tommy." The next most satisfactory instrument is the Mallock-Armstrong. The Baum is not nearly as good as the other two mentioned. *J. S. Fraser.*

Osteo-sclerosis of the Temporal Bone in Chronic Suppuration.—H. B. Graham. "The Laryngoscope," December, 1918, p. 872.

Graham admits that there may be normally in many individuals a solid mastoid. Cheatle has without doubt shown this. Graham holds that where we have a chronic suppurative ear we may have a true osteo-sclerosis, which is the result and not the cause of the suppuration. If Cheatle were right, the X-ray pictures of cases showing chronic suppurative processes would show this thickening of the antral border and mastoid process on both sides. In Graham's experience this has not been the case. In no case of chronic unilateral suppuration has the opposite side shown any evidence of embryological sclerosis, and in all cases of long standing there has been a definite thickening of the mastoid process on the diseased side. Graham has employed antero-posterior stereoscopic or single pictures of the whole head. [This method may save trouble in that it shows the tip of both mastoid processes in one picture, but it does not appear to be nearly so satisfactory as the usual method of taking each mastoid process separately.—Abs.]

J. S. Fraser.

Changing Methods and Advances in the Treatment of Progressive Deafness following Chronic Hyperplastic Otitis Media.—F. P. Emerson. "Annals of Otology," xxvii, p. 1250.

The writer confesses that in late years he has not been able to make a differential diagnosis between otitis catarrhalis adhesiva and the hyperplastic catarrhs from the view-point of ætiology. He now believes them all to be due to a toxin, and any differential diagnosis should be based rather on the tissue reaction in the tympanum than upon any difference in origin. Many cases with the apparently same ætiology show on the one hand toxic nerve charges that seem to have been caused by absorption directly through the lymphatics or blood-stream, and on the other hand a steady progression from naso-pharynx to Eustachian tube, tympanum and inner ear. The original toxic focus may be in the tonsils and pharynx, nose and alimentary canal. Careful examination is necessary in every case. Many cases can be helped; in others the process can be arrested. Many will have relapses on account of secondary foci and poor resistance. Results depend upon thoroughness and patience in searching out and draining chronic toxic foci and curing the attending infection. *Macleod Yearsley.*

Cerebro-spinal Fever.—Sir H. Rolleston. "Lancet," 1919, vol. i, No. 4988, p. 541; No. 4989, p. 593; and No. 4990, p. 645.

In his exhaustive lectures on this subject Rolleston makes the following observations as to nerve-deafness: It is less common than formerly. Deafness may also be due to otitis media, which is not regarded as a common complication of cerebro-spinal fever. He refers also to the use of nasal douching with 1 in 1000 permanganate of potash or spraying with dichloramine-T as a prophylactic, and the similar local treatment of carriers. *Macleod Yearsley.*

Chronic Suppurative Otitis Media and Exemption from Military Service.—Edward B. Dench. "The Laryngoscope," October, 1918, p. 717.

Out of 19,000 cases of middle-ear suppuration, one in every eighty-eight suffered from some intracranial lesion—either epidural abscess, sinus thrombosis, brain abscess or meningitis.

In any case of purulent otitis media, where occasional attacks of vertigo and persistent headaches are complained of, and where these symptoms seem to be dependent upon the condition of the middle ear, general military service should be forbidden. Exemption from military service on account of impairment of hearing is naturally governed by the same rules which apply to cases in which no suppuration exists.

Dench classes all cases of middle-ear suppuration under six heads: (1) Small central perforation with a history of intermittent discharge. The condition is seldom serious, and is usually relieved by local treatment. (2) Large, kidney-shaped perforation. If the mucous membrane is dry the condition constitutes no menace to life, and the patient is perfectly fit for military duty, provided the hearing comes up to the standard prescribed by the Government. (Dench believes that a patient with 520 or less in one ear and perfectly normal hearing in the opposite ear is perfectly competent for general military service.) (3) Large, kidney-shaped perforation, with the presence of granulation-tissue and profuse discharge. Cases should be accepted for observation, the granulation-tissue removed and the ear kept clean by irrigation. If at the end of a couple of weeks these ears become dry, the case comes under Class (2). (4) A perforation in the upper posterior portion of the membrana tympani with a sinus leading into the tympanic vault. The lower margin of the perforated drum-membrane has become adherent to the internal tympanic wall, while the epithelium of the drum-membrane has spread over the internal tympanic wall. We usually have a history of little or no discharge, and frequently find a dark brown crust covering the perforation, and extending out for a considerable distance on the posterior wall of the canal. These cases are the most dangerous with which we have to deal. They are prone to develop intracranial symptoms, and should not be accepted for general military service unless subjected to the radical operation. (5) Complete destruction of the drum-membrane, with sinuses leading in front and behind the short process of the malleus into the tympanic vault. If these cases are dry they should be accepted for general military service. If cholesteatoma is present, as evidenced by slight discharge, they should not be accepted for general military service without reconstruction. (6) A small perforation through the membrana flaccida without the presence of granulation-tissue. Such a case should not be accepted for military service without reconstruction, whether the discharge is constant, intermittent, profuse or scanty.

The character of the discharge (sero-mucous, muco-purulent or

purulent) aids us but little in arriving at an opinion as to whether the patient should be accepted for military service or not. Certain types are not very prone to intracranial involvement, while other types are exceedingly prone to some such complication. No type, however, is free from this danger. The presence of labyrinthine symptoms in any case of suppurative otitis media should constitute a basis for exemption, excepting those in which there is total deafness, a dead labyrinth, a dry ear, and in which the rotation test showed that compensation had completely taken place. Dench cannot too strongly urge the reconstruction of all cases of suppurative otitis media by radical operation in patients who are otherwise fit for military service. Every case of unilateral suppurative otitis media, where the discharge from the ear is alone the cause of rejection, should be subjected to the radical operation. In competent hands this operation is as free from danger as any operation in surgery. If the primary graft is used in every case where possible, the period of convalescence in the hospital is seldom over three weeks, and often not over two. In a certain small proportion of these cases there will be a slight mucous discharge from the ear from the region of the tube. This discharge constitutes no menace to life. It requires no more attention than does the washing of the face and hands. *Hearing:* Most cases greatly improved as the result of this procedure; many remained the same; very few cases had been made worse.

In cases of double suppurative otitis media the question of reconstruction naturally becomes more grave. Operation should be performed first upon the deafer ear, and, if this is successful, the other ear should be operated upon. Reconstruction removes permanently the danger of intracranial complications. The man is then able to fulfil his obligations to his country usually in a general military capacity, but always in the capacity of limited military service. Dench holds that operations should not be done at the ordinary base hospital, as they demand exact technique and considerable experience. Men should be sent to public hospitals for reconstruction, and afterwards returned to their respective military divisions. *J. S. Fraser.*

Syndrome of Gradenigo Following a Case of Acute Mastoiditis Complicated by Phlebitis of the Cavernous Sinus.—U. L. Torrini. "Arch. Ital. di Otol.," vol. xxx, No. 1.

Gradenigo in 1904 described paresis of the sixth nerve occurring in cases of acute otitis media, more rarely in chronic otitis media, with small perforation and insufficient drainage. It is accompanied by violent temporo-parietal headache. In most cases the symptoms gradually disappear as the otitis media heals. The ætiology has been obscure, as in those cases which died generalised meningitis was found, and it was uncertain whether the symptoms were due directly to the mastoiditis or to the meningitis. It was usually supposed to be due to inflammation of cells round the tube which set up a local pachymeningitis. The following case suggests involvement of the sinus cavernosus.

Child, aged nine. Admitted to the clinic April 27, 1918. For four days had had slight influenza. At end of first day pain in left ear, which was at first slight but became more intense, and later was localised behind the ear. Hot fomentations were applied without result. Child had had high remittent temperature and intense persistent headache. Examination showed opacity of left drum with moderate hyperæmia round the edges and along malleus. Nothing abnormal seen in mastoid region, but there was infiltration and extreme tenderness, most marked over the

antrum. Temperature 38·5° (100·2° F.). Operation same day—subtotal mastoidectomy. Fairly large antrum full of pus under moderate pressure. Whole mastoid cellular. Mucosa hyperæmic. Lateral sinus very far forward and occupying posterior wall of antrum. Wall of sinus opaque and thickened. Temperature on the third day 37·1° (98° F.). Headache improved at first, but returned on fourth day and became gradually worse till the eighth day. It was localised to the left temporo-parietal region. No rise of temperature. Slight discomfort on moving head. Knee-jerks slightly increased. No Kernig. No change till the sixteenth day, when there was slight chemosis of left eye. Four days later diplopia and slight dimness of vision. May 20, 1918, *i. e.*, twenty-two days after operation, paralysis of left external rectus definite. Wound opened up and dura of middle fossa exposed and some deep cells cleared out. Two days later slight exophthalmos and swelling of left cheek. From now onwards the symptoms gradually lessened and disappeared. Patient left hospital on June 26, 1918.

The symptoms in the above case were probably due to slight thrombophlebitis of the cavernous sinus. The lateral sinus walls were not healthy, and from there it would be easy for a slight infection to spread along to the cavernous sinus. *J. K. Milne Dickie.*

MISCELLANEOUS.

Tic Douloureux: Treatment by Alcohol Injections.—E. R. Faulkner. "The Laryngoscope," March, 1919, p. 130.

The chief characteristics of trigeminal neuralgia (tic douloureux) are the severity of the pain and its paroxysmal nature, lasting from a few seconds to several minutes. Most of the cases begin after thirty. Once established, the disease usually lasts the remainder of the victim's life, often with remissions of months or even years. Faulkner has never observed any factor of heredity. The sexes seem to be affected about equally. The patients are people with good habits. Many of the patients take alcohol freely after the onset of the disease.

Pathology.—Sluder, Snow, Roe and Berens have described sinus disease, especially sphenoiditis, as the cause. Many dentists have found disorders of the teeth, and some cases seem to subside after teeth extraction. Faulkner himself has examined the nasal accessory sinuses in all cases, but has not found sinus disease to be a constant factor. Microscopic examinations of the Gasserian ganglion and nerve-trunks removed by operation have shown nothing abnormal.

Diagnosis.—The face on the side affected is held motionless; no form of expression is attempted. All movements are regulated to prevent any unnecessary jar. The slightest touch, even a draught of air, may start it. In most cases the facial muscles on the affected side are contracted with the onset of the spasm. Any pain lasting over one half hour is not tic douloureux. The pain may affect all three divisions at once; more often either one or two branches are involved. The second seems to be the most commonly affected.

Treatment.—Drugs: In one case milk of magnesia did seem to give the patient some respite. Dana believes that in the first or second year of the disease large doses of strychnine will effect a cure. Leszynsky recommends castor oil three times a day in the early stages. In the later stages no drug exercises much influence, even opiates. *Electricity:* Head mentions a constant current, the anode placed over the area of pain

and the kathode over the spine. Counter-irritation, *e. g.* the actual cautery, gives relief in some instances. All cases should be examined by a dentist and a rhinologist before operative treatment of the nerve is undertaken.

Operative Treatment.—Nerve Section: The second and third divisions have been cut, and a period of remission of several months has resulted. Nerve section and avulsion have been largely abandoned since the introduction of the alcohol injection treatment. Removal of the Gasserian ganglion has yielded brilliant results, the cure being permanent in nearly all cases.

Alcohol Injections.—The results recorded are almost uniformly successful as far as temporary relief goes. Faulkner has had twenty-four cases, and can report fourteen successful injections, including one injection in the Gasserian ganglion. Where he has succeeded in getting within the nerve the results have been far better, and in some of them there is a prospect of permanent relief. *Technique:* (1) A special needle, 3 in. long, 1 mm. in diameter, with its end abruptly bevelled and containing a small stylet, is inserted until the nerve is touched It is then pushed forward a slight degree till one may judge that it is buried within the substance of the nerve. The stylet is now withdrawn and a hypodermic syringe attached. Four or five drops of 2 per cent. cocaine are injected and the stylet replaced. This should produce an immediate anæsthesia, If this is obtained, Faulkner again withdraws the stylet and injects 8 or 10 mm. of 85 per cent. alcohol. This causes no pain, and the anæsthesia becomes more complete. The patient tells one when one touches the nerve. If the operator desires to put the alcohol within the sheath of the nerve he may have to make several trials. (2) For the second division, insert the needle just below the angle formed by the zygomatic process with the malar bone, and push it slightly upward and a trifle backward through the pterygo-maxillary fissure to the foramen rotundum. (3) The landmark of entrance for the third division is on a level with the lower part of the incisura notch, and three-fourths of an inch in front of the tragus. Insert the needle with an inclination upward to the foramen ovale. One can only learn this part of the work by practice on cadavers. In the course of time the surgeon will find that the point of the needle will transmit to him the necessary information to guide him in his approach to the various foramina.

Results.—Of the fourteen cases ten have been free from pain ever since the injection, *i. e.* one month up to four years.

Untoward Results.—Slight hæmatoma is common, but is soon absorbed. Paralysis of the sixth nerve occurred in one case, but disappeared in a few weeks. The ganglion case developed a severe keratitis six weeks after injection. This recovered in three months, leaving some opacity of the cornea. *J. S. Fraser.*

CORRESPONDENCE.

To the Editor of The Journal of Laryngology, Rhinology, and Otology.

Sir,—Dr. D. R. Paterson, in his interesting paper on "A Clinical Type of Dysphagia" in the current number of this Journal, refers to "the not infrequent supervention, in such [spasmodic] cases, of malignant disease at the mouth of the gullet," and remarks that "this happens too often to be merely a coincidence." My own experience certainly tends to confirm this view. The three most remarkable features