

## ABSTRACTS

### EAR.

*Fractured Skull, with Secondary Mastoiditis, Meningitis, and Brain Abscess.* MORISSET SMITH. (*The Laryngoscope*, September 1919, p. 552.)

CASE I.—Male, aged 43, fell from the seat of a hansom cab, was picked up unconscious, bleeding from both ears, blood mixed with cerebro-spinal fluid. Spinal puncture revealed blood-stained fluid under pressure. Reflexes exaggerated. Temperature 102. Œdema of both discs. Operation two days later by Dr Sharpe: left sub-temporal decompression. The clot was subdural. Wound closed with two drains. Patient regained consciousness four hours after operation. Sixteen days later Smith found a tender post-auricular swelling (right), profuse discharge, neck rigid, Kernig sign present, spinal fluid cloudy; temperature 101. Second operation: mastoid cortex showed a fracture running below the temporal ridge forward to spine of Henle. Mastoid cavity filled with pus. Death two days later from meningitis.

CASE II.—Female, aged 40. Bleeding from right ear after an automobile accident, 31st October 1917. Examination showed ecchymosis of both orbits, mastoid regions, neck, trunk, and extremities. Cerebro-spinal fluid under pressure and bloody. Temperature 101.6. Three weeks after admission Smith found mastoiditis with post-auricular tenderness, profuse meatal discharge, positive Kernig and cloudy spinal fluid. Two weeks later Smith exposed the cortex and found a fracture running forward to the spine of Henle. He only removed the cortex, avoiding the use of hammer and chisel. The patient went home in two months, mastoid completely healed. Later she developed epileptic seizures, which began in the face, right arm, and leg. Three weeks later there was right facial paralysis, motor and sensory aphasia, increased reflexes (right arm), headache, tenderness over left fronto-parietal region. Second operation (Dr Sharpe): Left subtemporal decompression and drainage. Large abscess cavity found (pure culture of streptococcus). Patient died of meningitis three weeks later.

J. S. FRASER.

*Preventative Mastoidotomy.* GAVIN YOUNG. (*Glasgow Medical Journal*, July 1920.)

Long continued suppuration in the middle ear results in either (1) death through intracranial complication, or (2) increasing deafness, or (3) constant ill-health from long continued sepsis.

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Such conditions may be avoided by (1) palliative treatment, incision of the membrane and antiseptic treatment of the middle ear, pharynx, naso-pharynx, and orifice of the Eustachian tube; but if there is no improvement after one month of such treatment, (2) operative treatment must be carried out at once. In acute cases either a cortical operation (Schwartz) must be performed, or the conservative mastoid operation, which aims at draining the antrum into the meatus. In chronic cases of suppuration of the middle ear, either a radical or conservative mastoid should be performed; the former where cholesteatomata, tubercle or Vincent's bacilli, or recurring polypi are present, but in cases where the hearing is worth preserving, as when the conversation voice can be heard at more than three feet, the latter operation should be advised.

The chief point is, that if good results are to be obtained operations should be performed early in the disease, and as the great majority of the cases occur after scarlet fever and measles, the writer suggests that every fever hospital should have a skilled aurist on the staff.

ANDREW WYLIE.

*Mastoiditis and Suboccipital Pott's Disease.* G. PORTMANN. (*Revue de Chirurgie, Ann.* xxxviii., No. 9-10, 1919.)

The author, in an interesting communication, draws attention to the similarity between certain types of mastoiditis and tuberculosis of the cervical vertebræ. He describes in detail a space which he calls the cranio-cervical fossa. This fossa is bounded above by the lower surface of the petrous bone, internally by the upper part of the vertebral column, and externally by the styloid process and the muscles and ligaments attached to it, and more posteriorly the inner surface of the mastoid process. Pus may reach this space either from a perforation of the cortex of the petrous bone or from caries of the cervical vertebræ. The author reports three cases in which cervical Pott's disease was mistaken for mastoiditis. He draws attention to the seriousness of such a mistake, since in mastoiditis free intervention is necessary, while in caries of the cervical vertebræ this is very undesirable as mixed infection is liable to follow, with very serious, if not fatal, consequences to the patient. Pus in this situation must be aspirated through healthy tissue and treated on the lines generally adopted for surgical tuberculosis.

J. K. MILNE DICKIE.

*The Reliability of the Nystagmus Tests.* Major FISHER and Captain HAROLD BABCOCK. (*Journ. Amer. Med. Assoc.*, Vol. lxxii., No. 11, 15th March 1919.)

The authors give results of a series of experiments in which individuals were subjected to frequent rotation in the turning-chair,

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so that it could be determined, first, what effect, if any, such frequent and continuous rotation would have on their after-turning nystagmus.

1. The duration of after-turning nystagmus is not impaired by flying. A very large number of aviators have been re-examined so as to make this conclusion absolute and final.

2. From the evidence on hand, it would seem that in acrobats, whirling dancers, and athletes in general, there is no diminution of the nystagmus response.

3. Repeated turning experiments on normal persons occasionally produce an "apparent" and slight shortening of the nystagmus, but that this is only apparent and not real is demonstrated by the convex glasses.

4. In medical practice, an absence or impairment of the nystagmus responses to ear stimulation indicates definitely a pathological condition within the vestibular mechanism. PERRY GOLDSMITH.

*Decrease of After-Nystagmus during Repeated Rotation.* COLEMAN  
R. GRIFFITH. (*The Laryngoscope*, 1920, Vol. xxx., p. 129.)

It has been commonly observed that long persistence in whirling movements may reduce in intensity the distressing symptoms of dizziness. This has suggested that the accompanying ocular movements may also tend to disappear. Whirling dancers are frequently undisturbed by the swimming and giddiness. Griffiths found that subjects who were rotated for about three minutes daily during two or three weeks, lost, either wholly or in part, the "after-nystagmus." Fisher and Babcock have come to an opposite conclusion. They admit, however, a certain amount of reduction of the duration of after-nystagmus, and this they explain by the voluntary "gaze-fixing" of "a few subjects." In order to investigate the value of such assertions, Griffith chose the white rat as a subject for experiment. The lack of a fovea and of distant vision provide the best conditions of non-fixation. The rat was placed under a glass jar and the platform was rotated by a motor. It was found that the nystagmus was directly proportional to the *number* of rotations and to the *speed* of rotation. Each rat was rotated a like number of times to the right and later to the left, and averages of the duration of the nystagmus after stopping were computed. Griffith found a rapid decrease of after-nystagmus from day to day. Within ten to eighteen periods of rotation the nystagmus had completely disappeared. The number of ocular movements upon the first rotation varied between eighteen and twenty-five. This rapidly decreased during the first five periods to between five and eight, and soon became reduced to a single movement which generally remained for some time. Two of the ten rats gave anomalous

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results: these two were females, rotated during the period of gestation. Griffith believes that this points directly to the fact that nystagmus is closely related to the organic condition of the individual, and he suggests that further investigation upon this matter might be useful.

The white rat is a nocturnal animal, and experiments showed that morning nystagmus is invariably longer than that after evening rotation.

During the first days of the experiments, most of the rats showed a tendency to excessive defecation and micturition. Neither occurred late in the series. Trembling was common to most of the subjects for two or three days after the series had been started, and in the case of some of the subjects was the last observable response to the rotation.

As rotation takes place for the first time, two kinds of response are in evidence: (1) The rat may make frantic efforts to move in the direction contrary to rotation. When the rotation ceases the rat turns just as vigorously in the opposite direction. These attempts always cease in five or six seconds. (2) The head is at first turned far in the direction against rotation and swings to the opposite side as rotation ceases. This phenomenon also passes off.

The scratch-reflex affords an excellent indication of the intensity of the bodily disturbance present during and after rotation. Early in a series, a scratch-movement initiated before rotation is suddenly arrested as rotation begins. At the end of the series, an accurately localised scratch-movement was begun and carried to completion by several of the animals.

J. S. FRASER.

### *The "Pointing" Test in the Examination of Candidates for Aviation.*

A. MALAN. (*Arch. Ital. di Otol.*, xxx., 3rd Sept. 1919.)

The author makes use of a modification of the "pointing" test and records briefly the results obtained in the examination of 200 candidates. His technique is somewhat different from that of Bárány, Jones and Fisher. A turning-chair is used which has been improved by the addition of a controlling wheel geared up to the axis of rotation. The rotation and stopping of the chair are carried out with greater ease than is the case with other patterns. A horizontal board is fixed to the front of the chair about 25 cm. above the knees of the patient and on this is placed a paper marked with concentric rings like a target. The centre of the target is 6 cm. in diameter and the rings are at distances of 3 cm. apart.

The patient is given a pencil of a different colour in each hand. His eyes are bandaged, and the head fixed to a support. He is shown the centre of the target and told to touch the centre with each hand alternately ten times, raising the other hand over

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the head each time. Different coloured pencils are given him and he is rotated ten times in fifteen seconds and the test repeated. He is next rotated in the other direction, and a third test made with different pencils. This gives an exact graphic record of the deviations.

In the series there was absence of deviation in 16 per cent. of normal individuals. The reactions in normal persons are divided into the following types: (1) The classical reaction of Bárány, (2) the inverse type, (3) convergent, (4) divergent, and (5) irregular.

The classical reaction, *i.e.* deviation to the right after rotation to the right, and *vice versa*, occurs only in people with sensitive labyrinths or nervous systems. The inverse reaction, *i.e.* deviation to the left after rotation to the right, is not very common and occurs in normal individuals with sluggish labyrinths. In the divergent reaction the patient touches the centre at first, but with each succeeding attempt diverges farther from the centre. This is characteristic of extremely excitable labyrinths or central nervous system. In the convergent type, the patient deviates widely from the centre at first and then approaches it with both hands. This occurs in slight degrees of neurasthenia, while the irregular forms occur in more marked cases of neurasthenia. The latter give very variable results both as regards direction and degree. J. K. MILNE DICKIE.

*The Teaching of the Deaf.* MAX A. GOLDSTEIN. (*The Laryngoscope*, September 1919, p. 503.)

Goldstein gives an account of the Society of Progressive Oral Advocates, which includes members of the teaching and medical professions, psychologists, social service workers, parents and friends of the defective child, and others. The care and instruction of the deaf and of those with defective speech urgently calls for attention. After the war experienced teachers of the oral method carried out practical work in re-education by Lip-reading and Corrective Speech. The Society has unanimously adopted a resolution to *make impaired hearing in children reportable*. This was enthusiastically received at a meeting of the Section on Otology and Laryngology of the American Medical Association, and a permanent committee (Richardson, Kenyon, and Goldstein) was appointed to take charge of questions affecting the health and the education of the child defective in hearing or speech. The next step is "Standardisation of Schools for the Deaf." The ultimate and general acceptance of Oralism depends largely on the qualifications of oral teachers and the results of their work. The invincible weapon with which to contend against the manualist, the signer, and the "combiner" is not argument, criticism, or politics, but the deaf child intelligently trained in good, fluent, comprehensible

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normal speech. Goldstein carried out this plan before the State Legislature of Iowa. With the aid of nine orally taught children he demonstrated practically "to the sturdy legislators of this good State what speech and lip-reading and oral training actually meant." The money was voted without delay.

At a survey made of the City of St Louis about a year ago, it was found that over two thousand of the children attending the public schools of the city had some form of defective speech of varying degree. School authorities have not yet successfully disposed of this question, owing to lack of funds, lack of information, and lack of sufficient and properly qualified teachers. J. S. FRASER.

*Bone Conduction of Sound in Cetacea, and its Relation to Increased Bone Conduction in Human Beings.* JOHN D. KERNAN. (*The Laryngoscope*, September 1919, p. 510.)

One of the most important symptoms of chronic middle ear catarrh is the relative and absolute increase of bone conduction. Several theories are advanced concerning the phenomenon. (1) (Bezold's). In consequence of the changes within the middle ear tensing of the fibres of the ligamentum annulare renders possible an easier conduction of sound waves coming through the bone. (2) Sound waves coming through the bone are transmitted directly to the structures within the cochlea. (3) With closure of the external auditory meatus, the air within the tympanum receives the sound vibrations from the bony walls of the cavity and transmits them increased in force to the foot-plate of the stapes, the closed cavity acting as a resonance box.

Whalers testify as to the ability of whales to hear water-borne sounds. In hunting the animals no precaution need be taken as to air-borne sounds, such as conversation. Sounds which are carried through the water, however, such as splashing of oars, or blows against the sides of the boat, must in every way be avoided. Whales have an auditory apparatus, typically mammalian, which was originally designed to receive air-borne sounds but has been modified to receive water-borne sounds. The external meatus has been practically closed, the drum membrane fixed and the ossicles rendered immovable through fusion of the malleus to the os tympanicum. Sounds are evidently transmitted to the cochlea through the solid tissues of the head. The periotic and tympanic bones are but loosely connected to the other bones of the skull. Thus they can receive only such sound waves as impinge directly on themselves. Since the malleus is firmly fused to the tympanic bone it shares its vibrations, and transmits them, through the other ossicles, to the oval window. Sound waves impinging on the mastoid are transmitted through the chain of

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ossicles to the cochlea, the endolymph being put into motion through the foot-plate of the stapes as in other mammals. The tympanic and periotic bones are surrounded by numerous cells containing air which is set in motion by the vibrations of the hearing bones. These air cavities form a kind of sounding box. Any change, such as a thick, tense, rigid drum-head, which connects the ossicles more firmly to the tympanic ring, approaching the complete fusion found in whales, would increase bone conduction. Kernan accepts also Bezold's idea that it is a thick, tense ligamentum annulare, transmitting vibrations to the foot-plate of the stapes, which explains the phenomenon under discussion. This is the condition following a radical mastoid operation.

When the external canal is slightly blocked, bone conduction is increased. This is explained by conceiving the air-filled cavity with bony walls to be a sounding box. This is just what we have present in cetacea.

J. S. FRASER.

## GENERAL NOTES

### THE ÓNODI COLLECTION

THE attention of the readers of the Journal is drawn to the appeal which has been made by a Committee of Fellows of the Royal Society of Medicine for the purpose of raising a sum of money necessary to purchase the valuable collection of anatomical dissections made by the late Professor A. Ónodi of Budapest.

“It is no figure of speech to refer to this as a ‘unique’ collection and the most valuable of its kind in the world, and although the movement to secure it was originated by the Laryngological Section of the Royal Society of Medicine, its interest is by no means limited to Laryngologists and Rhinologists, as it contains specimens of profound interest to Otologists, Ophthalmologists, Odontologists, and even to general Surgeons, especially those dealing with the surgery of the head and brain.”

The collection, which consists of 450 dissected specimens, will be suitably mounted and preserved in the Museum of the Royal College of Surgeons of England, where it will be available to all for the purpose of study. It would be very unfortunate if, for want of the necessary purchase money, the collection were to pass into the care of other hands.

Subscriptions should be sent to the Honorary Secretary and Treasurer, Mr Philip Franklin, 27 Wimpole Street, London, W. 1.