THE INFLUENCE OF THE AUTOMOBILE UPON THE UPPER AIR-PASSAGES.

BY DR. D. BRYSON DELAVAN.

He spoke of the advantages and disadvantages from a sanitary standpoint of the use of the motor car. By giving outdoor life, change of air, etc., it was of service, but as it was often employed it might cause great injury to the delicate mucosa lining the upper air-tract and might lead to serious colds. Sudden changes of temperature or rapid radiation of body heat might cause chill with its well-known results on the human body. Increased atmospheric pressure, especially when combined with cold, must of necessity exert important influences upon the respiratory region from the nasal cavities and their communicating passages to the ultimate vesicles of the lungs. The presence in the air at times of large numbers of small, winged insects and the volatile products of shrubs and plants were also irritating. Dust might be irritating from its mechanical dangers. The wearing of a respirator might avoid these dangers, but there was no satisfactory one in the market. The carelessness as to clothing of many fast drivers exposed them to peculiar perils. Excessive riding increased tinnitus aurium. In many subacute and catarrhal states motoring was undoubtedly beneficial, but should be contradicted in acute conditions. All things considered the final verdict seemed decidedly in favour of the automobile. The authority of life insurance did not discriminate against it, high medical authority commended it in kindred directions, and common-sense seemed to sustain it.

Dr. J. O. ROE (Rochester) had noted the lessening of sinus diseases in motor-car users since the invention of the wind-shield.

AUSTRIAN OTOLOGICAL SOCIETY.

Meeting May 30, 1910; *Monats. f. Ohren., year* 44, *No.* 6.

HOFRAT POLITZER *in the Chair.*

Abstract of Demonstrations, etc.

FISTULA OF THE CANAL; ACUTE INVASION OF THE LABYRINTH; LABYRINTH OPERATION DURING THE ACUTE STAGE; RECOVERY.

BY DR. BONDY.

Mrs. M—— had been under the care of Neumann at the clinic for over two years with a chronic middle-ear suppuration. There

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was a perforation situate near the periphery, the anterior part of which was bound down to the tympanic wall. The secretion was minimal in amount, and at times the ear was frequently quite dry. Whisper at 6–8 mm.; the other tests showed impaired sound-conduction. Very well-marked fistula symptom. Neumann had previously often noted acute exacerbations of the discharge, accompanied by severe giddiness and great depreciation of the hearing, but the patient had repeatedly declined the operation as advised.

One evening, after some fourteen days of recurrent slight attacks of giddiness, she suddenly became intensely giddy, vomited, and was sent to the clinic by her family doctor. Examination revealed the typical condition of acute labyrinthitis, horizontal rotatory nystagmus to the sound side whichever way the eyes were directed, complete deafness and absence of caloric response on the diseased side. Large collection of *débris* in the meatus. Mastoid process tender. Within two days Bondy exposed the tympanum. The bone was eburnated, and the middle ear and attic entirely occupied with cholesteatomatous material. A fistula, 3–4 mm. long, was found, with blackened edges in the convexity of the canal. Neumann's labyrinth operation having been performed, the case ran a completely uneventful course.

Bondy recorded this case by way of asking (1) When and how should an operation be performed for a fistula? and (2) How should one treat acute suppuration in the labyrinth? Scheibe had lately maintained that the fistula symptom in itself was not sufficient indication for operating, and should be treated conservatively. Bondy had expressed his opinion that the fistula symptom even by itself demanded the radical mastoid operation, and considered that this case upheld his contention. In the vast majority of cases the fistula symptom was associated with the presence of cholesteatoma, and it was generally admitted that one could not hope to completely relieve this condition by conservative methods, and that therefore an acute exacerbation had to be apprehended if such treatment were adopted, under which circumstances the danger of an invasion of the labyrinth was always very imminent, as, indeed, his case showed. Only by freely exposing the middle-ear cavity was it possible to check the suppurative process and eliminate the risk of labyrinthitis.

The radical mastoid operation alone is sufficient in cases where the fistula symptom is still obtainable; the fistula itself calls for no other special treatment.

The risks of the labyrinth operation in cases of acute labyrin-

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thitis should not be set too high, to which the uneventful convalescence of his case bore witness. The labyrinth must, of course, be freely opened in order to afford good drainage, and he was accustomed to adopt Neumann's method in these circumstances. He submitted that the progress of the case in point afforded an entire condemnation of expectant treatment.

"Mucosus-otitis" with Abscess of the Lymph-glands and Caries of the Zygoma.

By Dr. Ruttin.

Mrs. B. K——, aged forty, was first seen on March 31, 1910. Seven weeks before she had suddenly suffered with severe pain in the right ear, which up till then had been perfectly well. On the fourth day after its onset Prof. Pollak had apparently performed a paracentesis, and within some two weeks all symptoms of pain and tinnitus had gradually disappeared, but one week later the cervical glands suddenly became swollen, as now they also appeared at the examination. The mastoid process was found to be unaffected, and although there was no secretion in the meatus the tympanic membrane was greyish-red, but still permitted the landmarks to be made out.

The cervical abscess was opened and healed normally, but the tympanic membrane did not recover its normal transparency, and in addition a swelling occurred over the zygoma. As the pus from the cervical abscess contained Gram-positive cocci in pairs and in short chains, and tubercle was excluded, the condition was considered to be dependent on *Streptococcus mucosus*. Accordingly the mastoid was first exposed, but as the bone was found almost normal the incision was carried forward to the zygoma and an abscess opened in this situation. In the zygoma a fistula was detected which ran backwards into the zygomatic tubercle. The diseased bone in connection with this and bounding the meatus was removed. The wound healed uneventually. *Streptococcus mucosus* was found in the pus. Ruttin regarded the case of interest as it exemplified so well the characteristic metastasis which occurred in connection with lesions resulting from *Streptococcus mucosus*.

Delayed Onset of Meningitis after an Operation for "Mucosus-otitis."

By E. Ruttin.

A patient, aged forty, was admitted on April 11, 1910, with

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the history that six weeks ago he had had a sudden attack of pain in the right ear, followed some days later with a discharge. For the last two weeks there had been pain behind the ear, but no headache, giddiness, or vomiting. The membrane appeared injected, but was not perforated, there was no suppuration, but the postero-superior meatal wall was sagging. Details on the membrane were obscured, the mastoid was tender, the labyrinth intact. Temperature 38·4° C. A large amount of pus was found at an operation by a colleague in the mastoid, in which the sinus and bulb lay exposed. During the operation slight bleeding took place from the bulb. Nine days afterwards the patient was discharged, nothing of importance having occurred in the meanwhile. On May 18, 1910, the patient was brought to the clinic unconscious with the typical picture of meningitis. Lumbar puncture gave a purulent fluid. The original operation was explored on the chance that some diseased cells had been overlooked, but all here was found healthy. Both cranial fossæ were, therefore, laid open and the dura incised. On the next day the patient died.

Post-mortem.—Diffuse purulent leptomeningitis, slight dural hæmorrhage, a small recent thrombus in the commencement of the transverse sinus, a non-adherent thrombus situated laterally in the longitudinal sinus. In the pus from the meningeal cavity *Streptococcus mucosus* was found.

Ruttin says that it was unreasonable to suppose the patient had meningitis at the time of the first operation five weeks before his death, and that therefore the infection must either have taken place through the lesion of the bulb—a suggestion the autopsy contradicted—or during convalescence from the wound, and in the latter case it must have been caused by a separate infection of the dura and not by a mere extension of the disease, as the labyrinth was not involved. This case again illustrated the danger and peculiar character of the sequelæ to mucosus-otitis.

Amongst other commentaries in the discussion which followed, LEIDLER said that this account corresponded with similar cases he had seen in which a mastoid operation had resulted in apparently complete relief, but after as much as three weeks in some instances meningitis had suddenly supervened, and in these cases *Streptococcus mucosus* had been found in the lumbar fluid.

AN INVESTIGATION INTO THE CAUSATION OF SEA-SICKNESS.

BY R. BÁRÁNY.

Bárány had noted that whilst travelling on a "scenic railway"

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he had very unpleasant sensations in his stomach during the descents if he held the head vertically, but that if it were bowed forwards at an angle of 90° this feeling completely disappeared. This also corresponded with his experiences in a lift. He considered that from this observation one could deduce the dependence, in part, of the unpleasant sensations in sea-sickness on a stimulation of the utricle and saccule. In connection with this he urged also that as lumbar puncture afforded relief in many cases of giddiness, it was quite conceivable that in some severe attacks of sea-sickness this procedure might prove beneficial.

FREY submitted that the explanation of the relief from unpleasant stomachic sensations during the rapid descents on the railway was attributable to the fact that in bowing the head forwards it was the horizontal canal which was chiefly affected by the motion, and thus an impression was produced comparable to that which occurred in travelling forwards or backwards directly. As this latter was a sensation to which we were all well accustomed, the disagreeable sensations associated with a rapid descent were, so to speak, converted into those connected with ordinary locomotion.

NEUMANN was not prepared to admit that the sensations produced on the scenic railway were necessarily the same as those caused by sea-sickness, which latter, however, he well knew. During a very rough ocean passage he had had ample time and opportunity to analyse the symptoms of sea-sickness both on himself and his fellow-travellers. He had been able to detect no nystagmus, and had only noted the psychic conditions of oppression, slowing of the pulse-rate, nausea, vomiting and cold perspiration, all of which were referable to some stimulation of the vagus. The vestibular symptoms of vertigo and disturbances of the power of equilibration were present in all more or less, but were subordinated to those mentioned in the first group. As the horizontal position had proved the most comfortable both for himself and others, he had thought that perhaps the symptoms were due to cerebral anæmia, and he had attempted to combat this by wearing a rubber constriction band round his neck; but the effect did not corroborate his view—indeed, the sickness was more preferable. He had tried to overcome the vestibular symptoms by the application of galvanism in opposition to their apparent direction, and the current was used up to a point when it was no longer bearable, one pole being applied to the tragus, and the other to the umbilicus, and interchanged. No appreciable result, however, followed this treatment. He was unable to draw any definite conclusions from this small experience, but felt sure that bowing forwards the head could only very slightly influence the feeling of sea-sickness, which he considered was dependent on both vestibular and vagus impulses together, and both these features should be kept in view in the rational treatment of the malady.

RUTTIN had carried out experiments on himself much on the same lines as described by Neumann, and with much the same results.

BÁRÁNY, in reply, said that of course one could not expect any immediate improvement from the position of the head if one had already become sea-sick, the only logical application of his observation was as a prophylactic measure. In answer to Frey, he stated that the sensations

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produced by a rapid descent were referable to the utricle and saccule, and certainly not to the canals, as by this movement no current could be induced in the endolymph, which only occurred during rotation, and that the fluid itself was incompressible. The utricle and saccule were the centres concerned with movements of the body in straight lines, and he had already demonstrated previously that if the head were bowed forwards the motion of the body upwards or downwards would give the impression of a movement forwards or backwards respectively.

[This statement of Bárány's must not apparently be accepted without some reserve—though it is with great diffidence one presumes to criticise so accurate an authority—since if the utricle and saccule are alone concerned with movements of the body in straight lines, and if by bending the head forwards at an angle of 90° the experience of a rapid descent is enabled to be construed into an impression of motion backwards in the horizontal plane, then it would appear that the converse should also hold good—that is, with the body in a supine position, or if in a sitting or standing position with head bent forwards at an angle of 90°, and carried forwards through space in the horizontal plane at a rapid rate, this motion should be construed as one in a downwards or upwards direction, according as to whether the body is travelling head or feet first, or forwards or backwards.

Or the problem may be represented more graphically as follows:

Hypothesis.—When standing or sitting with the head inclined at an angle of 90°—

Downwards gives the impression of backwards,
Upwards ,, ,, forwards.

Conversely, standing or sitting with head inclined at an angle of 90°—

Forwards should give the impression of upwards,
Backwards ,, ,, ,, downwards.

And if lying in the supine position, motion—

Head first should give the impression of upwards,
Feet first ,, ,, ,, downwards.

These conditions occur on an ordinary railway train, and though it is true that the speed is varied gradually, still a sudden alteration in the position of the head or body should provoke the equivalent of a sudden alteration of direction; and yet it is difficult to believe that such effects are produced as will support the above theory. One would also have expected that a rapid downward motion with head at 90° should have occasioned an idea of forward movement in the horizontal plane, and the other movements varied respectively. It would seem that some further qualifications as to the function of the utricle and saccule are necessary, or that there are other factors which contribute towards the perception of motion in straight lines.—A. R. T.]

Politzer remarked that the observation that no nystagmus was observed in sea-sickness was most important, and wished to associate himself with Neumann's view that in this condition the vestibular apparatus played a very small part.

A Case of Deafness for Conversation, with Peculiar Vestibular Reaction.

By Neumann.

The patient, in spite of intact membranes, was completely deaf

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on both sides to conversation. As regards the tuning-fork tests, perception for the lower tones up to the small octave was completely absent, and from thence to the high tones there was very considerable depreciation; bone-conduction was present. Periodical attacks of giddiness also occurred, which, though at first slight, had in the last three weeks become almost unbearable. No response whatever was obtained by the caloric tests, but there was a prompt reaction to both rotation and galvanism. The condition was the same on both sides. The patient had declined any operation, but had been kept under observation for some two years, during which time the hearing had become worse still, and nystagmus could now quite easily be provoked with the slightest movement of the head.

After referring to some other somewhat similar cases, Neumann remarked that for this extraordinary group of symptoms he was only able to offer, as a mere suggestion, by way of explanation, some recurrent alterations in the consistency of the fluid contents of the labyrinth, such as might, for instance, be the result of inflammation or hæmorrhage or some other, as yet unknown, conditions. As, however, time did not then permit, he would defer any further remarks as to the pathology of these cases till the next meeting.

ALEX. R. TWEEDIE (*trans.*).

Abstracts.

NOSE.

Baumgarten, Egmont (Budapest).—*Impairment of Vision due to Intra-nasal Conditions.* "Monats. f. Ohrenheilk.," Year 44, No. 9.

The report of the following cases forms the subject of this article, preceded by a brief introduction.

A woman, aged sixty, was referred from the eye department with the story that her sight had been failing for two weeks and that now she could not distinguish people in the street. Right eye, myopic vision $\frac{5}{50}$, improved with concave glasses to $\frac{5}{10}$. Left eye vision, $\frac{1}{70}$, chronic papillitis passing on to atrophy. Intra-nasal examination: The left middle turbinal was enlarged towards its hinder portion and almost engaged the septum. Apart from this no abnormality was detected.

Under cocaine the sphenoidal sinus could be reached by displacing the left middle turbinate outwards and its anterior wall broken down; although no pus or even serous fluid was found the patient at once stated she could see better. On account of this improvement and with a view to affording permanent relief the left middle turbinal was removed. The next day the patient reported that her sight was still better and that she

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