

## OTOLOGY.

UNDER THE CHARGE OF

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**Arterial Hypertension and Hypertension of the Labyrinth.**—LAFITE-DUPOND (*Annales des maladies de l'oreille, etc.*, December, 1908, p. 739), by experiments upon anesthetized dogs, determined the fact that an increased intralabyrinthine pressure was followed by an increase also in the arterial pressure. The increase in labyrinthine pressure was effected in some cases by increased air pressure in the tightly stopped external auditory canal, and in other instances by the injection of normal salt solution into the labyrinth itself through the medium of the round window, the increased or decreased pressure of the cerebrospinal fluid being accompanied by corresponding variations in the blood pressure. The channels of communication between the labyrinth and the cerebrospinal space are the aqueductus vestibuli and the nerve sheath of the acoustic; these, however, are so inadequate as a medium of gross communication, that a rapid translation of pressure from the labyrinth fluid into the cerebrospinal space cannot be conceived; but, as it was observed that the blood pressure changed almost instantaneously in response to the intralabyrinthine pressure, the inference is at least permissible that the internal ear is an organ with a capacity to exert an influence on the blood pressure. The pathogenesis of increased intralabyrinthine pressure is a difficult question. If the hypertension in the labyrinth stands in relation to increased blood pressure, which pressure is primary and which the sequence of the other? Lafite-Dupond has observed that in all patients with labyrinthine hypertension increased blood pressure was observable, as contrasted with the fact that with a considerably increased blood pressure there was no evidence whatever of disturbance of the auditory function, with the exception of a decrease in the upper tone limit of audition, and a shortening of the duration of hearing by bone conduction. The symptoms accompanying, in a greater or less degree of severity and frequency, the labyrinth hypertension are subjective noises, disturbances of audition, otalgia, diminished hearing by bone conduction, and increased blood pressure, these symptoms being sometimes accompanied by headache and vasomotor disturbances. For local treatment the author recommends massage of the drumhead, with short excursions of the piston of the air pump, and for general treatment the subcutaneous administration of pilocarpine.

**The Monochord and the Upper Tone Limit.**—R. WILBERG (*Archiv f. Ohrenheilkunde*, 1909, lxxx, 83, 165) states that the first recorded investigations, as to the upper tone limit of audition, made by means of the monochord, were those of F. A. SCHULZE (*Annales de physiologie*, 1907) and J. HEGENER (*Deut. Otol. Gesellschaft*, 1908) both observers

making individual tests in comparison with the Galton whistle, tuning forks, and metal rods, preferentially in favor of the monochord as a controllable and reliable means of upper tone production. This instrument, as described by Schulze, consists of a length of slender steel or silver wire, preferably the former, fastened firmly at the two ends by means of clamps, and with an intermediate, movable clamp permitting definition of the vibration length of the wire, the production of the desired tone being effected by means of light longitudinal friction. For this actuation Schulze employed a small piece of leather, but Wilberg obtained better and more uniform results by the use of a wash leather glove, stroking the wire between the fingers, and later by using a strip of leather with a fish-tail slit in the end, the leather being drawn lengthwise of the wire with the apex of the slit rubbing upon the metal. The comparisons drawn between the test made with the monochord, and those including the upper limits of the Galton whistle served to confirm previous opinions in regard to the unreliability of the upper portions of the Galton scale, and emphasized the value of the monochord in such investigations as those undertaken by Wilberg to determine the upper tone limit of audition at different ages in the human subject. The conclusions drawn were to the effect that there is no generally determinable upper tone limit, that it is dependent upon the age of the individual and the strength of the tone employed, and that it is increased by accustomed use and decreased by conditions which represent a resistance to the passage of the sound waves, such as are presented in disturbances of the sound-transmitting apparatus.

**Resistance Capacity of the Facial Nerve.**—R. BARANY (*Archiv f. Ohrenheilkunde*, 1909, lxxx, 147) states that in a case of mastoiditis, in a tuberculous subject, without evidence of the implication of the facial nerve, an operation resulted in the removal of a large sequestrum, including the whole of the tip of the mastoid process and the anterior and inferior walls of the osseous external auditory canal, including the stylomastoid foramen. At but one point, in the lower portion of its course, was the facial nerve surrounded by normal bone, but, notwithstanding the extent of the sequestrum formation, the nerve was functionally intact. In the discussion which followed the report of the case here recorded, G. Alexander drew attention to the fact that the facial nerve is especially resistant to such injury as might accompany hemorrhage, contiguous inflammatory processes, the pressure incident to cholesteatoma formation, or the effects of a surrounding bony necrosis, the vestibular nerve being less resistant than the facial, and the first nerve to suffer injury being the cochlear branch. H. Frey reported a case of carcinoma in which the facial nerve was almost completely embedded in the growth without evidence of loss of function, and F. Alt reported the removal, as a sequestrum, of almost the entire labyrinth, in the course of a radical operation, in a case in which there had been but slight evidence of facial paralysis. According to H. Neumann the reason for the greater resistance capacity of the facial nerve was to be found not only in its structural characteristics, thicker fibers, and larger nerve cells, but also in the fact that its blood supply being derived from the stylomastoid artery, the labyrinth drawing its main supply from the internal auditory.