

escape of secretions from the drum-cavity. The case due to neuritis of the facial nerve was relieved after four months of treatment, chiefly by the constant electric current every two or three days.

**Surgical Treatment of Diseases of the Attic and Mastoid Process.**—A. BRONNER (*British Medical Journal*, October 17, 1896) has presented a very valuable consideration of the technique and recent modifications in the surgical treatment of the above-named diseases. In this paper we are informed that "diseases of the attic and mastoid process are very common, and if not operated on early and with great care, they are extremely fatal. Many cases are seen by the nasal surgeon in which no operation was thought necessary or performed until the disease had spread to the brain, or in which the operation has been restricted to a Wilde's incision or the use of the gouge or gimlet." The latter is practically the Schwartz operation, and is very good in acute cases—i. e., in those occurring as a complication of acute otitis media, and was in universal use in mastoiditis of all forms until 1889. In this latter year Küster recommended that in all cases in which the middle ear was extensively diseased we should not be content with Schwartz's operation, but should also remove the whole of the posterior wall of the ossous external meatus, and in the same year von Bergmann suggested that in addition to the posterior wall the upper wall of the bony auditory canal should be removed. In 1892 Stacke suggested his method of operating in chronic cases, and this is now adopted in such cases. In this operation of Stacke a long incision is made behind the ear, about half an inch from the line of insertion of the auricle, the cutaneous external meatus is loosened and cut across as near the drum-membrane as possible, and the whole ear drawn forward. The remnants of the membrane and the two largest ossicles are then removed, a protector is then placed in the attic, and the ossous wall of the attic, or the tympanic plate, is chiselled away. The upper and outer wall of the external meatus and the outer wall of the mastoid antrum are then removed in the same way. A large cavity is thus formed, consisting of the middle ear, the attic, and the antrum. The ear is then replaced and the wound stitched up or left open, according to the extent and nature of the disease.

Macewen and Horsley prolong the incision round the top of the auricle, and then draw the whole of the ear downward. Bronner prefers this method, as it gives a better view of the diseased parts, after the membranous canal is cut across and laid open at its top. Macewen also uses a hurr impelled by a dental lathe, instead of a chisel, to remove the bone. The great advantage of Stacke's operation is that we are enabled to carefully examine the affected region, to remove thoroughly all diseased parts, and to readily watch and control the field of operation during the process of healing. In order to keep open the large cavity thus formed and have it covered with epithelium, the cutaneous external meatus is cut through horizontally in one or more places, well into the auricle, and a flap or flaps are formed which are stitched to the edges of the external incision or to the periosteum. In some cases the subcutaneous tissue of the flap may be removed and the skin placed directly in contact with the walls of the cavity formed by the operation. (Lanke.) In cases of cholesteatoma a permanent opening is maintained

behind the ear, by forming a flap of the skin behind the ear and inserting it through the external wound into the cavity. Bronner further says: "The symptoms of disease of the attic and the mastoid process are often well marked and evident. Frequently, however (and these are the most dangerous cases), the symptoms are few and obscure, and it is most difficult to diagnosticate how far the disease has spread and to know if we should operate or not. If we are thoroughly acquainted with the local anatomy and the technique of the operation, the danger attending the operation is very slight. We make exploratory incisions in obscure abdominal cases, why not in obscure mastoid cases? Surgeons, as a rule, and certainly general practitioners, seem to treat diseases of the mastoid with something like contempt. They do not seem to realize the danger of cerebral complications, and they often fail to recognize that early operative treatment would frequently save the patient's life."

**Otitic Sinus Thrombosis.**—WEISSGERBER reports a case of otitic sinus thrombosis successfully treated by operation on the sinus and jugular (*Deutsche medizinische Wochenschrift*, 1897). The patient was a healthy woman, aged twenty years, who had never suffered from any ear-disease until a week after a slight angina in August, 1896. She was then suddenly attacked with earache, which lasted twenty-four hours, and was finally relieved by spontaneous rupture of the drum-membrane. During the three days following this event the patient lay in bed, the ear discharging a little. At the end of this period the pain in the ear and discharge from it ceased, and the patient got up; but after getting out of bed she had a slight chill. Ten days later pain began again in the ear, and fever set in. The next day the patient had a chill lasting ten minutes, and again on the two days following she had chills. The pain in the ear had ceased, but the patient complained of general weakness, and was finally put under special care on September 13, 1896. At this time the patient appeared apathetic; her general condition presented nothing of special note, and her right auditory canal contained a little pus. Externally the ear and its vicinity showed no changes, though the mastoid process was tender on percussion. There were no changes in the neck in the line of the great vessels. On the evening of this day (September 13th) the patient had a heavy chill, lasting fifteen minutes, succeeded by a temperature of  $40^{\circ}$  C. and a rapid pulse. Acute purulent otitis, involving the mastoid cells, was diagnosticated, and opening the mastoid cavity was indicated. Consequently, the next day the mastoid cortex, which was healthy externally, was punctured and an inoffensive pus escaped. Further removal of the cortex revealed softened bone and granulations in the cells, antrum, and tympanic cavity. These cavities were cleaned out with a sharp spoon. The wound was then tamponaded with iodoform-gauze. On the next day (September 15th) the general condition of the patient was unchanged. Temperature  $38.9^{\circ}$  C. to  $38.2^{\circ}$  C., and in the evening another chill. On September 16th the temperature varied from  $40.4^{\circ}$  C. to  $37.2^{\circ}$  C., and on the next day from  $38.2^{\circ}$  C. to normal, but went up again to  $40^{\circ}$  C. The next day the inner wall of the mastoid was partly removed and the sigmoid sinus exposed. Beneath the sigmoid fossa and the sinus a little pus was found. Further interference in this region was stopped, and the jugular vein—which before the anesthesia had been found a little

sensitive to pressure—was laid bare. No changes were found in this vessel or its neighborhood. It was ligated with a simple ligature in the middle of the neck. Succeeding this the wall of the sigmoid fossa was so far removed as to permit exposure of the sinus from the so-called knee downward for 2½ cm. After incision of the thickened pus-covered sinus-wall, free pus escaped from the interior of the sinus, and the rest of the purulent contents was carefully mopped away. No firm occlusion, either by peripheral or central thrombus, was found. A little bleeding occurred from the peripheral end of the severed sinus, but this was checked easily with a tampon. The case now proceeded most favorably; there were no more pain, no chills, and on October 26th the patient was permitted to leave the hospital.

As the author states, this case shows the advantage of operating in sinus-thrombosis while the thrombus is confined to the mastoid portion of the sinus.

**An Acute Syphilitic Affection of the Ear.**—E. A. CROCKETT describes an acute syphilitic affection of the ear, probably of the internal ear (*Boston Medical and Surgical Journal*, February 11, 1897). This affection consists in very sudden and severe deafness, more or less severe vertigo, and violent tinnitus occurring in persons previously free from ear-disease, but who have had syphilis not long before the ear-symptoms showed themselves. "This complex of symptoms should always suggest syphilis, and will be found to be caused by it in the large majority of cases where there has been no previous ear-trouble. We do not meet the same group in the rare cases of labyrinthine hemorrhage or tumor, and also in the rare and sudden fixations of the stapes which occur in the deep middle-ear thickenings. In these cases the history and hearing-tests, or, in case these fail, the treatment will immediately show us the probable cause." In the syphilitic cases the watch-and-voice-deafness is marked, and the tuning-fork of middle register is wholly lost to bone-conduction, but remains "fair for air-conduction." "The acute labyrinthine processes, on the other hand, show a marked loss of high tones in all cases, and in the more severe ones a total deafness by both air- and bone-conduction over a greater part of the region." The pathological process in these cases is not well understood. The clinical evidence would seem to be in favor of an effusion into the labyrinth as a cause of the particular group of symptoms we are considering. The early tertiary or late secondary period seems to be the favorite time for this particular lesion. Close examination will reveal the fact that only the auditory nerve is affected, which should aid in the differential diagnosis. The administration of mercury and iodide of potassium to the maximum limit will often be of no avail. "Here the subcutaneous administration of pilocarpine up to its full physiological limit will be of great service. The improvement in hearing and the diminution of vertigo following the administration of this drug is in acute cases little short of marvellous."

**Labyrinthine Vertigo.**—GELLÉ points out that labyrinthine vertigo depends upon a number of causes (*La Tribune médicale*, July 16, 1896; also *Therapeutic Gazette*, December 16, 1896). When it is due to anæmia of the labyrinth the symptoms are vertigo, subjective noises in the ears, and a tendency to syncope. It is sometimes seen in persons who have suffered

from chronic diarrhoea or other diseases impairing the general nutrition, and in cases of prolonged lactation or of convalescence from grave diseases; in cases of marked albuminuria, in cachectic affections, in dilatation of the heart, and similar disorders. Arteriosclerosis, senility, diabetes, and bleeding hemorrhoids may also provoke it. It is sometimes due to local thickening of the tympanic tissues, particularly of the membrana tympani. In many of these cases there are associated with the vertigo hyperæsthesia and pain. The remedies recommended are the glycerophosphates and a tonic regimen, the use of stimulants, the employment of milk and iodides if arteriosclerosis or cardiac disease is present. The use of the milk-diet, with a few drops of the tincture of strophanthus, or small doses of sparteine or caffeine, alternated with fluid extract of kula, has proved valuable. Should syphilis be the cause, of course antisyphilitic remedies must be employed. Should the vertigo be associated with middle-ear disease, local treatment of the ear becomes of the greatest importance. Here bromides, strychnine, and arsenic become of value. Gellé believes that sulphate of quinine is a valuable aid in many cases of persistent vertigo following primary or secondary disease of the internal ear. *Many cases, however, are best relieved of their vertigo by surgical interference with the bones of the ear.*

In ear-vertigo associated with toothache and neuralgia of the fifth pair of nerves sulphate of quinine is also useful and may be associated with small doses of neonite. Vertigo due to toxæmia of any kind must be treated by combating the peculiar poison producing it: malaria, gout, constipation, tobacco, salicylate of sodium, and excess of quinine may cause vertigo, and must be guarded against, therefore. Vertigo may be due to reflex causes, and this form is seen most frequently in hysterical and neurasthenic persons, and is frequently associated with migraine or facial neuralgia, never with hepatic or nephritic colic.

Gellé's conclusion is that in labyrinthine vertigo sulphate of quinine is of extraordinary importance, and that it is useful in the majority of instances.

**Pyæmia after Acute Suppuration of the Middle Ear.**—RÖPKE (*Archives of Otolaryngology*, vol. xxv. No. 4) reports a case of well-marked pyæmia fully established in the third week of the aural disease. The secondary infection in this case was evidently due to the improper treatment of the ear (the left) in the acute stage of inflammation by syringing with chamomile-tea and poulticing, as ordered by the family physician. The local mastoid symptoms were largely negative. There was nearly constant pain in the left temple. The eye-ground was not examined. Chills, rapid rise and fall of temperature, the permanently rapid pulse, even in intervals of normal temperature, tumor of the spleen, and the dry, cracked, thickly coated tongue were relied upon in establishing the diagnosis of nitid pyæmia from osteophlebitis. Suppuration of the mastoid cells and probably acute necrosis of the bone-tissue of this cavity were evidenced by the profuse discharge from the ear and the tenderness of the mastoid to pressure. No external symptoms of sinus-phlebitis were present. There was no œdema either in the region of the temple or at the posterior boundary of the mastoid.

The mastoid cavity and antrum were opened, found full of pus and granulations, and then completely cleared out. The vertical portion of the lateral