year 1884, and the patient informed me recently that she expected her confinement in the beginning of May.

Fig. 1.

I consider the above a better procedure than amputation of the vaginal portion, because it leaves the os uteri in a natural state; and I think it preferable to Emmet's operation, because it leaves the cervical canal intact. The uterus, as a whole, is less mutilated by this procedure; and, presumably, its functions may be supposed to be

Fig. 2.

better exercised when the cervical canal and the os uteri externum are preserved. It may be remarked that the use of the stem is less likely to be attended with benefit in these particular cases; for the vaginal portion is too long, and something must be done to shorten it, although the use of a stem might be useful, in order to further improve the patency of the cervical canal, after the vaginal portion has been shortened by the procedure above described. In the case related, however, the operation alone appeared to produce satisfactory results.

DONATIONS.—The Mercers' Company have given £210 additional to the National Hospital for Consumption at Ventnor, and £157 10s. to the Metropolitan Convalescent Institution, £105 to the Walton and Kingston Homes, and £52 10s. to the Seaside Branch.—“LL.D., London,” has given £100 to St. Mary's Hospital, Manchester.—Miss de Costa has given £100 additional to the Sussex County Hospital, Brighton.—“A Friend” (per Mr. D. Clewin Griffith) has given £50 to the Middlesex Hospital.—Lord Colville has given £50 to the Great Northern Central Hospital.

OBSERVATIONS ON TWO CASES OF SUDDEN AND EXTREME LOSS OF HEARING, ON BOTH SIDES, OWING TO DISEASE OF THE NERVOUS STRUCTURES OF THE EAR; MATERIALLY IMPROVED AFTER THE HYPODERMIC USE OF PILOCARPINE.

By THOMAS BARR, M.D.,

Surgeon to Glasgow Ear Hospital; Lecturer on Aural Surgery, Anderson's College, Glasgow, etc.

DISEASE of the nervous apparatus of the ear is usually so hopeless, and so little affected by remedies, that cases, such as the following, in which favourable results are obtained by treatment, seem worthy of being brought before the profession.

CASE I.—J. M., a ship-steward, aged 22, presented himself for treatment at the Glasgow Ear Hospital, on August 25th, 1884, suffering from almost total deafness. He was a man of pale and unhealthy aspect. Six months before, he contracted syphilis, followed by secondary symptoms; for which, however, he was successfully treated. He was also somewhat addicted to alcoholic indulgence. One of his sisters suffered from phthisis pulmonalis, but the other members of a pretty large family were quite healthy.

Inquiry elicited from him the following account of the origin and course of the disease. About six weeks previously, while crossing the Atlantic on the voyage out to Montreal, he was seized with great nausea, vomiting, and severe giddiness. Accustomed to sea-life, he knew that he was not liable in the least to sea-sickness. By the time the ship arrived at Montreal, the sickness had passed away, and the giddiness had become much less. On the afternoon of his arrival, however, while walking in one of the streets of Montreal, the weather being extremely hot, he was suddenly seized with giddiness so extreme that he staggered and fell to the ground, without losing consciousness. After a short time, he recovered sufficiently to make his way with assistance to the ship. He was put in bed, and the surgeon of the ship prescribed some form of pills.

Up till this time, his hearing was unaffected; and, indeed, at no time during his past life had there been to his knowledge any dulness or other disturbance of the hearing on either side. On the following morning, however, he awoke from sleep finding that his left ear was apparently totally deaf. As he lay with the right side of his head on the pillow, he could not hear what was said by a man speaking close beside him. But now a loud noise, like the rush of water, was constantly present in the deaf ear, as well as through the head. Towards night, the hearing of the opposite or right ear seemed also to be passing away, and next morning found him absolutely deaf on both sides, so that the loud shouting of his mates close to his head was by him quite unperceived. The extreme giddiness continued, and the loud rushing noise filled his head.

During the whole of the voyage back to Liverpool, he lay in bed in a condition of great giddiness, nausea, and total deafness. When he attempted to walk, his movements were like those of a drunken man; he kept in a straight line for a few steps, and then reeled from side to side. Up till his arrival in Liverpool, there had been little, if any, pain in his head; but, while in the steamer from Liverpool to Glasgow, he became affected with severe pain in the back of his head, and very especially in the region behind his ears.

In Glasgow, he was placed under the care of Dr. Halket, who shaved the head, and applied a cantharides plaster on the surface behind each ear. These were repeated two or three nights afterwards. There was also prescribed by Dr. Halket a mixture containing iodide of potassium chiefly, with good effect, “clearing the head and helping the stomach,” as the patient expressed it.

One morning, shortly after his arrival in Glasgow, when he awoke from sleep, he experienced a sensation of stiffness in one cheek; and on examination, with the aid of a mirror, he found his face drawn to the left side. The odd appearance which he presented, with shaven head and twisted face, constrained him, even in his sad condition, to smile; this facial movement rendered, of course, the twisted appearance still more striking. In attempting to drink tea or water, the liquid tended to trickle out of his mouth. This facial paralysis of the right side was of short duration, passing away in the course of the same evening.

About this stage of the illness, a consulting physician saw the patient, and expressed an unfavourable prognosis. His state, nevertheless, began to improve. Under treatment by iodide of potassium

the pain in the head diminished, and the giddiness became much less, although some tendency to stagger still continued. The deafness, however, remained unaltered; and, as soon as it was practicable, about seven weeks after the beginning of the illness, Dr. Halket sent him to the Ear Hospital for treatment.

On admission, I found his hearing by both aerial and osseous conduction almost quite abolished. Words spoken very loudly into his ears could not be understood by him. In the right ear, however, the voice was heard, although the individual words could not be distinguished. He was unable to hear the loud tick of a watch on either side, pressed firmly on the auricle or on the bones of the head. The sound of a vibrating tuning-fork applied to the bones of the head was also unperceived. Objective examination of the outer and middle ears yielded negative results; on both sides the tympanic membranes presented quite a normal appearance, while the Eustachian tubes were permeable. He did not now complain of the subjective sounds. The vertigo was much less than at an earlier stage of the illness; but there was still a disposition to stagger in walking. The pain in the head was at times quite absent, but now and then it returned in severe paroxysms.

The digestive functions seemed to be much disturbed; the tongue was thickly coated with a yellowish brown fur, the bowels were persistently constipated, while an extremely foul odour was exhaled by the breath.

He was admitted to the indoor department of the hospital, and at once treated by pilocarpine injections. One of Wyeth's tablets, containing a third of a grain of the drug, was dissolved in six minims of water, and injected underneath the skin of the shoulder every second day for six days, and then every third day for nine days. Copious perspiration followed every application of the remedy. The first produced very considerable sickness and vomiting; on every subsequent occasion there was some nausea excited, but it was much less than after the first. The patient always remained in bed for a few hours after the use of the remedy.

Improvement in the hearing almost immediately manifested itself. A day or so after the first injection the patient noticed some improvement in the right ear, and this improvement seemed to go on gradually almost day by day. In three weeks after admission, he could hear and understand, with the right ear, conversation in a voice only slightly elevated above ordinary speech. In other respects also his condition improved. He soon afterwards resumed his occupation of steward on board a steamer.

On the 18th April, 1885, about nine months after the seizure, his state was as follows. On the right side a watch whose normal hearing distance is forty inches, was heard eight inches. On the left it was not heard even on pressure. This does not, however, truly represent his power of hearing speech, which was so good that persons conversing with him did not detect any dulness of hearing. A vibrating tuning fork applied to the middle line of the head was heard better in the right ear.

There were no subjective sounds in the ear or head. The tendency to stagger, which had continued for a considerable time, while in the dark, had passed completely away. The complexion was much healthier looking, the tongue was clean, and the breath was free from the foul odour.

CASE II.—R. McG., a labourer, aged 54, was admitted to the Ear Hospital on the 20th February, 1885. He stated that he had been suddenly affected a fortnight before admission with total deafness while in the act of stooping at his work. He had been out of work for some months, and this sudden loss of hearing occurred just on the morning of his return to work. His bodily health had suffered from the poverty due to the enforced idleness, while his mental condition was depressed, owing to the conduct of a reprobate son. No hereditary tendency to ear-disease, and no syphilitic origin, could be traced. The shock of deafness, he said, was signalled by a sensation as if a pistol had been discharged in the interior of his head, and immediately afterwards he ceased to hear the noises in the ship-building yard where he was employed, or the voices of the workmen. This was followed by severe pain affecting the whole head, but especially the vertex, and by a sensation in his right ear, "just as if a clock were working inside." There was also slight giddiness.

On admission, it was found that a watch with a loud tick could not be heard on pressure in either ear. The voice could not be heard, although loudly spoken into the right ear; in the left it was heard, but only partially understood. Osseous conduction by the tuning-fork was faint, and the duration of the perception was short. Objective examination of the ear showed a small oval calcareous patch, evidently of long standing, on each tympanic membrane, behind the handle of the malleus. These were probably the results of old catarrhal affections in

the middle ears, and had no connection with this attack. Inflation of the middle ears had no effect upon the deafness. A cantharides plaster was first applied behind each ear, without, however, yielding any good result.

Subcutaneous injections of a solution of pilocarpine were then employed. The solution contained at first only one-twelfth of a grain of the pilocarpine; but it was increased, after three or four injections, to one-third of a grain. In the weaker form, they were employed daily; but the stronger solutions were only used every third day. In all, eight injections were employed. The patient remained in bed for six hours after each injection, and free diaphoresis always followed. Slight sickness was excited by the strong solutions. Improvement in the hearing of speech was observed when two injections had been used, and after that there was gradual but steady improvement in the hearing, with disappearance of the subjective sounds.

On April 13th, 1885, two months after the seizure, the condition was as follows. The tick of a watch heard, in normal hearing, forty inches from the ear, was heard eight inches on the right side, and one inch on the left. Conversation in an ordinary tone of voice was understood without any difficulty. The osseous conduction of sound by the tuning-fork was heard rather better than the aerial—a circumstance which was probably due to the existence of the old catarrhal affection of the middle ear. The subjective sound had completely disappeared.

OBSERVATIONS.—There can be little doubt that, in the two cases here described, the seat of the mischief was in the nervous apparatus of hearing. It is, however, not possible to determine with certainty in what part of the auditory nerve the lesion existed—whether in its roots in the brain, in its stem, or in its complex terminal expansion in the labyrinth.

In the first case, which was clearly due to syphilis, the gravity of the symptoms seems to indicate that the mischief was intracranial. The premonitory symptoms of nausea and vomiting, the pronounced vertigo and staggering, the severe pain in the back of the head, and the temporary affection of the facial nerve, seem to point to the auditory centres in the cerebellum as the probable seat of syphilitic exudation. On the other hand, in the second case, the lesion was probably labyrinthine and apoplectic in character (apoplectic deafness of Knapp), and of the nature of rupture of a small vessel simultaneously in both labyrinths, excited by the stooping posture, and predisposed by a generally enfeebled state of the system. The absence of marked vertigo is a somewhat noteworthy peculiarity of this case, and suggests that the lesion was more probably in the cochlea than in the semicircular canals.

When we consider the generally hopeless character of lesions of the nervous structures of the ear, it can hardly be denied that the favourable terminations in both of these cases were due to the action of the pilocarpine. Politzer, who was the first to propose this remedy in ear-disease, believed it to be serviceable chiefly in cases of labyrinthine disease of recent and sudden occurrence, and especially in those of syphilitic origin. My experience, as shown in these two cases, seems to confirm this view of the value of pilocarpine. In several instances of labyrinthine mischief gradually coming on in the course of chronic middle-ear disease, where I have used this remedy, there seemed to be no effect produced. As to the explanation of the therapeutic action of pilocarpine, we can only assume that it has an especial power of stimulating the absorbents in contact with the effused products before these have become organised, and that this resorbent effect has also some connection with its remarkable powers of exciting the cutaneous secretion. It seems to have a more decided action upon the intracranial absorbents; and the vascular and lymphatic supply of the labyrinth is in reality the same as that of the interior of the cranium. If this view of its action be correct, it would be reasonable to employ this method of treatment more generally in cases of cerebral apoplexy.

A PHYSICAL TEST FOR BUTTER.—According to M. Rabot, all the chemical processes of ascertaining the falsification of butter are unsatisfactory, excepting that of a thorough analysis, which is a long and delicate process. He calls attention to a special physical character which enables the observer in a few minutes to distinguish pure butter. The crystals of solid fatty acids depolarise the sun's rays. These crystals are not found in natural unadulterated butter; they belong to more solid acids; they are luminous, and are distinguished from the surrounding substance, which is non-luminous. When butter becomes rancid, it contains butyric acid, which has no influence on polarised light. Chemical analysis is now necessary only to determine the extent of adulteration.