NEW EAR-PROTECTOR FOR THE PREVENTION OF THE INJURIOUS EFFECTS OF COLD AND NOISE.

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EXPOSURE to cold or to any other noxious influence acts very variably upon different individuals, and the effect is regulated in a great measure by the inherent delicacy of the separate organs. There are individual qualities of refinement in the auditory sense arising from constitutional peculiarities and structural modifications of its several parts, just as there are individual characteristics in other complex organs. It is a fact of common observation that persons differ much in the sensibility of the ear to the effects of cold and noise. The sudden shock caused by an explosion is really painful to some; at the same time, others manifest a dread of cold air, and complain of aural uneasiness when exposed to rough weather, and the cutting easterly winds of our climate. Fortunately, serious injury of the organ does not often follow from these causes; still, it must be remembered, they are very commonly associated with many slight forms of disturbance, which may at length lay the foundation of chronic disease. Many persons manifest a dislike to the entrance of cold water into the external auditory canal, and others complain of irritation, and an unpleasant sensation of fulness in the head, after bathing. Plunging and diving in the sea are often followed by distress, giddiness, and temporary deafness, and many complain of aural disturbance lasting many days after taking a bath. These facts are very familiar to surgeons who reside on the coast, and who have frequent intercourse with those who indulge in the healthful exercise of swimming.

Again, sudden and violent noise is often injurious to the organ of hearing. A loud explosion may excite only temporary distress; but, when it is frequently repeated, the membrana tympani and chain of ossicles are often permanently disturbed. Hammermen, and artisans engaged in factories, are frequently injured in their ears from the incessant noise associated with their daily labour. The varying sensibility of the auditory apparatus is well exhibited among this class. Some appear altogether to escape, and they seem to become accustomed to the unnatural vibration; while, with others, the constant oscillations of the tympanum result in a permanent disturbance of the sensibility of the nervous structures. A loud explosion, especially when sudden and unexpected, is often followed by injury to the ear. The officers and men of the Royal Navy, who are exposed to the powerful concussion of the monster cannon of modern introduction, are frequently deaf and uneasy in their ears for many hours after gun-practice. Occasionally, the tympanum is ruptured, and medical officers have often recorded these accidents, and also cases of a more serious nature, which have been attended with hæmorrhage from the meatus, followed by otorrhœa and obstinate headache and vertigo.

The auditory apparatus, moreover, is often sensitive and prone to injury in consequence of recent inflammation or chronic disease, and, under these conditions, the shock of noise and cold is especially injurious and painful. Ordinary nasal catarrh, associated with temporary disturbance of the middle ear, leaves behind it for a long time a delicate state of the organ, and this is just the kind of recurring disorder which is often neglected, and frequently terminates in chronic mischief within the tympanic cavity. At the onset, these affections of the ear are so slight, that they are treated with indifference; still, they are attended with increased susceptibility to all external influences. The organ is also especially delicate during early life, and some children are constitutionally liable to aural injury from careless exposure. It is particularly tender after acute disease, and in children convalescent from scarlatina or fever, though they may have been fortunate enough to escape destructive changes. The catarrhal inflammation of the external ear involving the integument and periosteum of the canal, and sometimes the tympanic membrane, is also followed by a sensitive condition of the organ, and the disease is very prone to recur on slight exposure to cold.

There exists, then, a large class of individuals labouring under slight and chronic forms of disease, which are often scarcely recognised, but at the same time they render the organ extremely liable to injury and inflammation; and therefore it is evident that the circumstances are very common and very variable in which the ear, like the organ of vision, demands special care and protection. The question of preventive treatment is one of great practical importance, and deserves more attention than it has hitherto received at the hands of aural surgeons. It includes attention to hygienic surroundings, to habits of

temperance and regularity, to the selection of suitable occupations, and to careful avoidance of unnecessary exposure to noxious influences. The organ itself, however, often requires special protection; and the obvious method consists in the introduction of a suitable septum into the external auditory canal, for reducing the intensity of the sonorous undulations, and preventing the shock of cold air and water. A plug of cotton-wool has been almost universally employed for this purpose; and this material is both light and soft, and also admits of very easy application. Still its use is not free from many objections. In appearance, it is both conspicuous and unsightly, and is a very feeble protector against the entrance of water into the meatus. It readily becomes soiled, and is prone to be impacted in the auditory canal. Concretions, consisting of a mixture of cotton-wool, ceruminous matter, and exfoliated epidermis, are often removed by the syringe, which have become gradually matted together in the passage in the course of months or even years, causing at length great irritation and deafness. The ear-protector which I have now used for several months, with very great success and comfort, in a large number of cases of aural delicacy and susceptibility, is a very simple contrivance. It consists merely in a little conical cap of vulcanite, made of flesh-colour material, so that it is scarcely discernible under ordinary circumstances. (Fig.) The edge

Three sizes of the protector (enlarged).

is surrounded by a little flange, which prevents it from slipping into the meatus. At the same time, this edge assists in its introduction and removal. The special advantages of the vulcanite protector are very apparent. It is very durable, and admits of washing; it causes no tickling or irritation, and is both light and soft in the ear. At the same time, by its perfect elasticity, it becomes moulded at once to the shape of the canal. The protector is prepared for me by Messrs. Lynch and Co. of Aldersgate Street, in various sizes, to suit the varying capacity of different ears. It completely prevents the entrance of water to the tympanum, and this makes it a perfect protector for bathers and divers. It does not suspend the sense of hearing, but is only a modifier of sound, diminishing the intensity of sonorous vibration; and this effect can be regulated by the size of the shield selected and the degree of firmness with which it is introduced into the canal. It is also an excellent ear-protector during ordinary exposure to severe and rough weather, and it can be carried in the pocket by a timid patient ready for any emergency. It is adapted for a large number of cases of aural delicacy and chronic disease, and it will be found far more convenient and sightly than the old-fashioned plug of cotton-wool.

BULLET-WOUND OF ABDOMEN, WITH EXTENSIVE HÆMORRHAGE FROM LEFT KIDNEY: RECOVERY.*

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WILLIAM B., labourer, a man of small stature and cachectic appearance, aged about 50, was accidentally shot by a friend with a bulldog revolver, at a distance of not more than a few yards. The bullet entered the abdominal cavity on the left side, at a point midway on the vertical line drawn from the lower ribs to the iliac crest, one inch behind the anterior superior spine of the ilium. Immediately on receiving the injury, he fell to the ground, and unconsciously passed a considerable quantity of urine, normal in appearance. This was followed, or rather accompanied, by vomiting. Neither vomit nor urine contained any appearance of blood.

On my arrival about half an hour after the occurrence, I found the patient extremely collapsed, the pulse very rapid and scarcely perceptible—the frequency of its beat could not be ascertained—the skin moist and cold, face blanched, eyes sunken and glassy, and other symptoms of internal hæmorrhage, as well as of shock. Strong brandy and water was administered in small and frequent doses; and, on careful examination of the wound and clothing, it could at once be seen that the bullet had entered and remained in the abdominal cavity, and that no part of the clothing had been carried into the wound. The wound itself presented the usual appearance of “close quarters”; the neighbouring parts of the clothing were charred, and the skin inverted:

* Read before the West of Ireland Branch.