

## THE PREVENTION OF DEAFNESS.\*

A specialist in the diseases of the ear, Dr. S. F. Nielsen, has contributed to the "Danish Red Cross Magazine" an article in which he describes the mechanism of hearing and outlines the many ways in which the risks of deafness may be diminished. As he points out, the hearing apparatus consists of the outer, the middle, and the internal ear. The outer ear includes not only the ear itself, but also the auditory passage leading from it to the tympanum, or drum of the ear. This funnel-shaped passage conveys the sound waves to the drum which belongs to the middle ear.

A chain of three minute bones leads from the drum across the middle ear to an oval membrane which is stretched over an opening in the internal ear. As sounds impinge on the drum, they are conveyed by the vibrations of this chain of bones to the oval membrane, which in its turn conveys the sounds to the interior of the internal ear. Here there is a harp-like arrangement of tiny strings of different lengths, each length responding to a certain definite note. The vibrations of these strings are conveyed by the auditory nerve to the brain, where they are interpreted as sounds of different quality and pitch.

The mechanism just described is the one employed under normal conditions in registering sound impressions. A break in this mechanism, such as the dislocation of the chain of small bones in the middle ear, would inflict deafness on the side affected were it not that an alternative route for the conveyance of sound to the brain exists. This route dispenses with the drum and the chain of small bones. Sound impressions which impinge on the bone surrounding the auditory passage penetrate to the oval membrane already mentioned. From here the sound impressions are conveyed in the manner already mentioned to the brain. As damage to any one of the parts concerned—the external, the middle and the internal ear—can be prevented, each will be considered separately.

The auditory passage is liable to become blocked by foreign bodies, such as wax, etc. Amateur attempts at removing such obstacles may well do more harm than good, and tinkering with matches, hairpins and the like is to be deprecated. Repeated washing and irrigation in the hope of preventing the formation and collection of wax should be discouraged as the irritation set up is likely to promote the secretion of wax. Foreign bodies obstructing the auditory passages should therefore be dealt with by a doctor.

The middle ear may be the seat of the simple catarrh, or pus may form in it and need an outlet for its escape. Normally, the Eustachian tube, which forms an open channel between the middle ear and the back of the nose, affords an escape of fluid from the middle ear to the exterior. But when this tube is blocked by inflammation at the back of the nose or by adenoid growths, fluid in the middle ear is unable to escape. If this fluid is pus, it will erode the walls of the middle ear and may burst through the drum with consequent discharge of pus from the auditory passage.

When pus is seen coming from a child's ear under

these conditions, a doctor should at once be consulted. For if treatment is undertaken at once or within the first month of the appearance of the discharge, complete recovery can almost certainly be effected. But when such a discharge has been neglected and has lasted as long as three months, the chances are that the hearing on this side will have been permanently damaged.

The internal ear also is exposed to dangers which, if understood, can be avoided or greatly diminished. Incessant exposure to violent noise in factories in which machinery is at work may wear out part of the internal ear unless appropriate measures are taken. The worker who finds deafness overtaking him under these conditions should seek some other occupation which is less noisy. Certain drugs such as quinine are also apt to cause deafness if taken in large quantities or over a long period. It may not be generally known that hearing is considerably influenced by the general health. It is well, therefore, to avoid over-exertion and to lead as quiet a life as possible. Mentally exhausting work and lack of sleep are both liable to impair hearing. The notion that deafness can be diminished by "training" the ear to listen in is quite false; the patient needs to be protected against sounds rather than exercised in them.

Infections such as colds tend to increase deafness and should therefore be carefully avoided. To this end warm clothing should be worn, and the breathing of cold and damp air at night should be shunned. It is particularly important that the deaf person should not suffer from cold and clammy feet.

Many a case of deafness, whether it be due to chronic inflammation of the middle ear or to degenerative processes in the internal ear, had its beginnings in some disease of childhood. This is an additional argument for being most consistent in ensuring effective isolation when epidemics of children's diseases occur. For, after all, prevention is often far more effective than treatment.

## IMPERIAL BABY WEEK CHALLENGE SHIELD.

### CHILD WELFARE IS ONE OF THE EMPIRE'S STRONGEST LINKS.

The National Baby Welfare Council announces that for 1939-40 it has awarded the Imperial Baby Week Challenge Shield to the Health and Baby Week Committee of the City of Mysore, India, for the best Baby Week Campaign held throughout the Empire (exclusive of the United Kingdom).

Second place was secured by Kongwa, Tanganyika Territory, while Ruselkonda (India), Etawah (India), Mauritius and Ceylon (an all-island entry) were highly commended.

This proves that, in spite of war, child welfare work overseas is regarded as of the utmost importance. In Mysore no less than 13 Baby Shows were held during the week at different places in the city, and the 1,203 competitors were judged by no fewer than thirty doctors. A large number of vaccinations were done at the different infant welfare centres during the campaign and other features were special Children's Days, lectures on mother and child craft, competitions for well-kept houses and photographic competitions of the prize-winning babies.

The Imperial Competition has been in operation since 1926, and even war does not stop it. The babies are our Empire's greatest assets and the National Baby Welfare Council has been pleading their cause for the last 24 years.

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[previous page](#)

[next page](#)