

deaf child or of the methods of educating him; they feel that such experimentation should be in collaboration with teachers. Children may be taken from school, their parents being imbued with the idea that their hearing is going to be restored. They may be told that the child has been instructed on entirely wrong lines, and a new method is going to be elaborated. Eventually they all return to the special schools, and occasionally one of them can hear a little better, but the majority are in no way improved. Precious months of their all-too-short educational life have been sacrificed to no useful purpose and the lost time can never be made up.

Now, suppose for the sake of argument that a child acquires a knowledge through the ear of 200 to 300 words and can answer a number of familiar questions and can respond to commonplace requests. What educational use is going to be made of this new power upon ordinary lines? Such a child can never be educated by aural means alone, and he must return to a special school for deaf children. It is a painful fact, only too well known to teachers of the deaf, but not appreciated by the layman, that even slight deafness in both ears has an extraordinary effect on the educational progress of a child, and necessitates a radical modification of the ordinary methods of school education. Lip-reading, as a means of communication, is a necessity, and only after lip-reading has been learned can the education be pushed on at anything like the normal rate of progress. What, then, of children whose deafness is gross?

The oral method of instructing deaf children cannot be dispensed with in the case of any child who has an appreciable degree of bilateral deafness. The "hard-of-hearing" find lip-reading of inestimable value, and it may even for them be described as a practical necessity. In my opinion, the ideal place for experiments with the hearing of deaf children is at the school attended by the child, and the experiments should be conducted in coöperation with the teacher. If the experiments are in the hands of a medical man, and at a clinic at a distance from the school, then an experienced teacher of the deaf, possessing an intimate knowledge of the psychology of the deaf child and of methods of educating him, should be associated with the doctor. To develop residual hearing, apart from the intrinsic value of any hearing power, exercises a wholesome effect upon the quality of the voice of the deaf child. Every child in my school with the slightest degree of hearing has regular "hearing" exercises at frequent intervals. But, as a general rule, it is only when there is a large degree of hearing, combined with an active intelligence and good memory, that there is any chance of the pupil being transferred to an ordinary hearing school and his education continued on oral and aural lines. And even the best of these transferred cases have to rely upon their lip-reading ability, and be given favourable positions in front of the class.

I should like to see readers of THE LANCET who have conducted experiments with deaf children, with a view to stimulating a dormant sense of hearing or to improving already existing hearing power, tabulating their results publicly. Parents and teachers could see to what extent real achievement has been reached. Respecting any particular series of experiments it is desirable to know (1) the number of cases the investigator has treated; (2) the length and nature of the treatment in each case; (3) the auditory, mental, and educational condition of each case when the experiment began; (4) the degree of progress made individually in the development of hearing acuity—physiologically considered, and apart from improvement in the power of mental interpretation; (5) the extent to which any increased acuity of hearing power has influenced subsequent educational methods and progress.

I am, Sir, yours faithfully,

G. SIBLEY HAYCOCK.

Oral School for Deaf Children, "Fitzroy House,"
6, Kensington Park-gardens, W. 11.

WELSH NATIONAL SCHOOL OF MEDICINE.

To the Editor of THE LANCET.

SIR,—There is, we find, some confusion in the public mind as between the two appeals for university education purposes in Wales which appeared on Dec. 6th and 7th. May we explain that the two coördinate appeals were necessary and, indeed, inevitable, and were issued with the approval of the University and College authorities.

The Welsh National School of Medicine owes its inception and its present position to the foresight and energy of the governing body of the University College of South Wales and Monmouthshire and their friends. When, however, the new charter of the University of Wales was granted, it became necessary to give a national and university status to the school of medicine, although the administration remained in the hands of the Council of the University College of South Wales and Monmouthshire. Indeed, the Royal Commission recommended that the medical school should be a separate constituent college. When, therefore, funds were required, it was the business of the University Council, as controlling the finances of all the university colleges in Wales, to issue the appeal on behalf of the Welsh National School of Medicine.

The appeal of the University College of South Wales and Monmouthshire is entirely for its special and immediate needs, and is not in conflict with any other. The most urgent need of the College is for new laboratories in physics and chemistry, and these are as important for medical students as for students in pure science. Meanwhile, the need of the Welsh National School of Medicine for a fund of £100,000 (or its equivalent in annual income), before August, 1922, is very urgent in order that the school may qualify for the Treasury grant of £5000 per annum. That grant is absolutely dependent on the success of the appeal now made on behalf of the Welsh National School of Medicine, and contributions will be gladly acknowledged on behalf of the Appeal Committee by Mr. Gwilym Hughes, Organising Secretary, Welsh National School of Medicine, Newport-road, Cardiff.

We are, Sir, yours faithfully,

(Signed) KENYON, Pro-Chancellor.

A. H. TROW, Vice-Chancellor.

University of Wales, Dec. 28th, 1921.

IMPORTANCE OF THORACIC RESPIRATION.

To the Editor of THE LANCET.

SIR,—I have read with great interest Sir Arbuthnot Lane's article in your issue of Dec. 24th, 1921, on the importance of thoracic respiration, for the reason that it refers to points, raised in an article in *National Health* (June, 1919), where I showed how much thoracic respiration was dependent on efficient nutrition, by which I meant the proper supply of nourishment and the bestowal of great care and attention on the functioning of the intestinal canal. My experience of the importance of the free and indeed forcible passage of air through the naso-pharynx as the chief if not the only factor in the development of this cavity and of its thorough ventilation, coincides entirely with the views on the mechanics of the naso-pharynx and of the bones of the face which Sir Arbuthnot Lane has described in detail in many papers on this subject.

I am quite satisfied that the infection of the lymphatic tissue of the naso-pharynx by organisms can be avoided by suitable breathing exercises, and I also believe that a certain proportion of adenoid hypertrophy can be removed by improving the vitality of the tissues generally by proper food, efficient intestinal drainage, and increased oxygenation of the blood in the manner indicated. After, and usually before I deal surgically with infections of the adenoids, I employ these methods of treatment to remove any residual infection and to prevent recurrence. It is important for those who operate for the removal of adenoids to realise that the

infection of this lymphatic tissue of the naso-pharynx is only one manifestation of a general loss of vitality due to defective nutrition.

I am, Sir, yours faithfully,
PHILIP FRANKLIN, F.R.C.S.

Wimpole-street, Cavendish-square, W., Jan. 2nd, 1922.

WHAT IS THE TOXIN ?

To the Editor of THE LANCET.

SIR,—The article which appeared in your issue of Dec. 24th, 1921, from the pen of Sir Arbuthnot Lane, dealing with the subject of respiration, raises issues which are of great interest to the biochemist and bacteriologist. Reference is made to some powerful toxin which depresses the muscles and so impairs the movements of the thorax. One would like to know what the nature of this substance is, where it comes from, and how it acts. Does it affect the muscle fibres themselves or their associated nerves? Is its site of action peripheral or in the central nervous system? The common occurrence of stasis in the intestines and of putrefactive products in the urine of the patients under discussion leaves little room for doubt that the alimentary tract is the source from which the poison comes. It may arise, like the amines and ptomaines, from the decomposition of food by the bacteria of the bowel, or it may be a true bacterial toxin synthesised by the micro-organisms from the chyme. The asthenia of the muscles closely resembles that which occurs in a more acute form in enteric fever, when the small intestine is infected by *B. typhosus*. This analogy suggests a solution of the mystery surrounding the toxin which we seek. When stasis persistently recurs in the ileum bacteria ascend from the cæcum into the small intestine. So far as the saprophytes are concerned, the density of this invasion is in a general way proportional to the severity of the stasis. The higher the pollution spreads the greater is the putrefaction which results. Soluble organic poisons are readily absorbed through the mucosa of this part of the bowel. It would seem very natural that toxins arising in this way from an infection of the ileum with *B. coli* should be similar in many respects to those absorbed when the same region is infected with *B. typhosus*, which belongs to the same group of bacteria. Future research will determine the precise chemical nature of the poisonous substance concerned, and in the meanwhile this explanation furnishes a working hypothesis of where and how it is produced.

I am, Sir, yours faithfully,
Cavendish-square, W., Jan. 2nd, 1922. N. MUTCH.

THE TREATMENT OF TONSILS AND ADENOIDS.

To the Editor of THE LANCET.

SIR,—According to a recent leading article in THE LANCET (Dec. 17th, 1921) a Council has been formed apparently to combat the opinions and deeds of those who are in the habit of operating on cases of nasal obstruction, and from the information given in this article it would appear that the necessity for the removal of tonsils and adenoids is principally in question. To one who is in the habit of removing tonsils and adenoids it would seem obvious that if the presence of these growths is causing symptoms of sufficient gravity to warrant operative interference, they should be removed. The symptoms that are undoubtedly due to this condition, leaving out the more debatable ones of epilepsy, asthma, rickets, &c., are the following: (1) Mouth-breathing; (2) catarrhal otitis media; (3) recurrent attacks of suppurative otitis media; (4) chronic suppurative otitis media; (5) palatal deformity and prominent incisor teeth; (6) recurrent sore-throats; (7) cervical adenitis. It cannot be denied that these symptoms are due in practically all cases to the presence of enlarged and diseased tonsils and adenoids. In the last decade many discussions have taken place and many articles

have been written on the necessity for enucleating tonsils, and a great many methods of enucleation have been described. These discussions and articles have satisfactorily disposed of the tonsils, but the question of adenoids has, to a great extent, been allowed to drop into the background, and adenoids are of equal, if not of greater, importance in the production of adverse symptoms. Tonsils should be removed when they cause symptoms, and it is my practice to remove them, even if they are not a source of great trouble themselves, provided the symptoms caused by the adenoids are sufficient to justify operation. It is less trouble to the operator and more satisfactory to the patient's friends to have them removed at the same time rather than at a later period, for as Dr. Merrill has stated¹ there is a definite tendency for tonsils to hypertrophy after operation on the adenoids alone.

Now let us take the main symptoms enumerated above in order.

(1) *Mouth-Breathing*.—It cannot be denied that adenoids cause this symptom by mechanical obstruction, and provided that there is no other cause of nasal obstruction—e.g., deflected nasal septum, &c.—removal of the adenoids must relieve this condition. Besides their mechanical effect adenoids, of course, produce nasal obstruction in other ways, by causing post-nasal catarrh and giving rise to hypertrophy of the inferior turbinates, especially the posterior ends. There is no doubt that many children with adenoids can breathe through their noses if they will make an effort, but it is a conscious effort; the child finds that it can breathe more easily with its mouth open, and consequently does so. If the cause is not removed the habit becomes permanent, and all the defects associated with this condition are liable to follow with serious results.

(2) *Catarrhal Otitis Media*.—This is a very common symptom of enlarged tonsils and adenoids; the infection takes place from the naso-pharynx via the Eustachian tube. The condition usually starts as an acute catarrh with an exudate of mucus into the middle ear, recurring at intervals, especially when the child is suffering from a nasal cold. If the adenoids are not removed the condition is apt to become chronic, and resulting in a certain degree of permanent deafness, and a tendency towards extreme deafness in later life. It is a matter of everyday experience that the majority of these cases are completely cured by operation, provided it is undertaken before the catarrh has had time to assume a chronic nature.

(3) *Recurrent Acute Suppurative Otitis Media*.—All the remarks made above apply equally to this condition, with the added risk of a chronic suppuration which may lead to a mastoiditis or even an intracranial complication.

(4) *Chronic Suppurative Otitis Media*.—I think it is recognised by most medical men that if tonsils and adenoids are present, their removal is the first step in the treatment of this condition in children, and a surprising number of cases dry up and heal after this has been done, even if they have hitherto resisted all forms of local treatment.

(5) *Palatal Deformity and Prominent Incisor Teeth*.—The results of operation on this symptom are the least satisfactory of any, because the children are for the most part older, and the bony structure has become more permanently affected before much notice is taken of it. Several cases which have resisted the dental surgeon's treatment have been referred to me for operation, and in all of them an improvement and a readier response to treatment has been noticed afterwards. If these cases are left alone in the hope that the child will grow out of it the results are often very distressing, the high arched palate and prominent incisors amounting to an absolute disfigurement; the appearance of many an otherwise good-looking child is quite spoilt by this condition.

(6) *Recurrent Sore-Throats*.—Nearly all the sore-throats of children are due to tonsillitis, and if the tonsils are enucleated the condition obviously cannot

¹ THE LANCET, 1921, ii., 994.