

701

Indian Journal of OTOLARYNGOLOGY

Editor :
Prof. C. SATYANARAYANA



Vol. VII

DECEMBER 1955

No. 4

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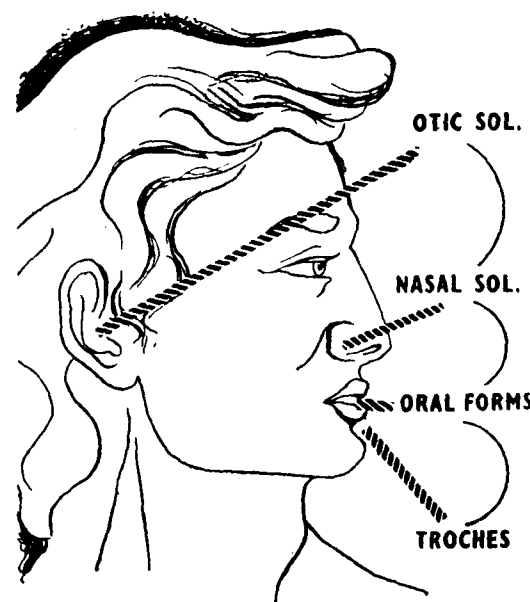


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- 1 Arslan, M. and de Vido, G. *Athens* 18:1 1952.
- 2 Potterfield, T.G., et al. *Phila. Gen. Hosp.* 2:6 1951.
- 3 Wolman, R., et al. *B. M. J.* 1:419 1952.
- 4 Wright, L.T., et al. *Antibiotics & Chemotherapy*, 1:165 1951.



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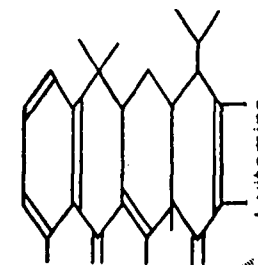
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INDIAN JOURNAL OF OTOLARYNGOLOGY

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Recent Progress in the Treatment and Prevention of Ear Diseases

BY

Dr. C. A. AMESUR, M.S. (Lond.)

Introduction.—Shri Chairman and Fellow delegates,

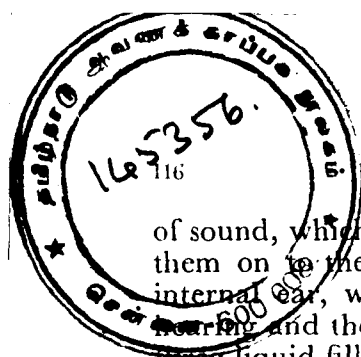
I thank the Union Ministry for Education for the invitation they have extended to me to give you a talk on the Recent Progress in the Treatment and Prevention of Ear Diseases. As we all know this is a highly technical subject, but I shall try to put the facts before you, in a simple and concise form, eliminating all technicalities as far as would be consistent for proper understanding of the subject.

2. Anatomy and Physiology.—We shall now proceed with a brief description of the anatomy and physiology of the human ear.

The ear is a composite organ with two main functions. Its one function is well known. It is an organ of hearing; its function is collection, transmission and perception of sound waves. Its second function is not so well known. It is a peripheral organ of equilibration, that is to say bodily balance. It acquaints the mind with the position or alteration of position of head in space.

The ear is divided in three parts : (a) External ear, a trumpet shaped organ that collects sound waves, (b) the middle ear space, containing a chain of ossicles that transmits the vibrations

Read on 21st September 1955 at the Ministry of Education, India's Seminar on the Education of the Deaf, held at Mussoorie from 19th to 24th September 1955.



AMESUR—(I. J. O.)

of sound, which the drum magnifies four times and then passes them on to the internal ear, through its oval window; (c) the internal ear, which lodges the delicate organs of the sense of hearing and the organs of balance. The organs of balance are three liquid filled tubes, each half a circle in shape, hence called semicircular canals. They contain peculiarly arranged hairs, which sway when the liquid in the canals moves round; this creates impulses, which are transmitted to appropriate parts of the brain; the brain utilizes this information, to control bodily balance.

The middle ear space is a very important part of the human ear and may be considered in a greater detail:—it is a small space with walls, roof and floor that are mostly rigid in most cases. Its back and front walls, however have an opening each. The back opening connects it with mastoid antrum. The front opening connects it with the back part of the nose, by means of a tube—Eustachian tube—named after the great anatomist who first discovered it. This tube opens during yawning, swallowing, eating etc. and thus allows air to enter the middle ear space. This results in equal pressure on two sides of the ear drum and this leads to its efficient functioning. It is lined with epithelium of ciliated variety; those cilia work like sticks in a broom and sweep material to and fro from the back of the nose to the middle ear.

A reference may be made to two other structures, as they exercise a tremendous influence in infections of the ear. There is a thick layer of lymphoid tissue, quadrilateral in shape arranged in pleats and folds, like a bunch of grapes, in the roof and back part of the nasopharynx—technically known as “Adenoids”. There are also certain air containing cavities round and about the nose—known as “Para-Nasal Cavities”. Their function is in connection with resonance of voice. In a large number of ear infections, the source of infection has been traced to adenoid growths and infections in the para-nasal sinuses.

The whole of the middle ear space is housed in temporal bone; its component parts are known as:—

- (a) Squamous, covers mastoid antrum,
- (b) Petrous—contains inner ear,
- (c) Tympanic ring—This lodges the drum.

3. **Preventive Hygiene of the Infections of the Ear.**—There are a group of causes that may be classified as “accidental infections”. These are easily preventable by a little understanding, if one remembers the close association of ear, nose and throat.

It will now be easily understood why a hard blowing of the nose, cough or a sneeze will pass on the germ laden drops from the back of the nose through the Eustachian tube to middle ear and thence to mastoid. In an allergic subject the hard blowing of the nose with one nostril closed not only irritates the throat, but results in cough and sneeze and a sinus infection, besides that of the ear. It is therefore that one suggests that the babies should sleep on the bellies during colds so that better drainage can cure their cough.

Another common cause is swimming and *diving*. This is responsible for a very large number of ear infections specially during the summer months. This can easily be prevented or at least minimised if adequate precautions for preliminary medical examinations of would be bathers, chlorination of water etc. were instituted. Also if bathers remembered, that prolonged immersion in water tends to chilling of the body surface and thus leads to autoinfection.

People subject to allergy, coughs and colds, should realise that they are running a very great risk, when they indulge in indiscriminate swimming and diving; for they thus become liable to get water pushed through their tubes to the middle ear, resulting in acute pain.

4. **Adenoids.**—Brief description of this very interesting structure has already been given. It is no exaggeration to say that 50% of the ear infections, come from the presence of adenoid vegetations. If school teachers could only realise the immense disablement from their presence and kept themselves on the look out for spotting these cases at an early stage, many of the ear infections could be prevented. They produce a characteristic facial appearance, which is designated as “Adenoid Facies”. For their benefit I will describe this “Facies” in simple concise language. The child's mouth is open, the lips are thick and the upper one is hitched up, the upper central teeth project, the chin recedes, the nostrils are reduced, the naso-labial furrow has a tendency to obliteration, a vein across the root of the nose is often marked, eyebrows are raised, there is malar prominence and a vacant look.

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5. **Role of Nutrition.**—Balanced diet consists of flesh forming stuffs, i.e. proteins, energy giving stuffs, i.e. carbohydrates (starches and sugars) and fats. To this are added different minerals. But it has been proved that this diet is not enough, if health has to be maintained. Certain articles are essential to health and they have been designated as "Vitamins". A very small quantity is quite often adequate. Their absence in foods leads to bodily deterioration. Many have been traced and given alphabetical names. The discoveries are however not yet complete.

Vitamin "A" is one such substance. It protects against infections of the upper respiratory passages and ear infections. It normally exists in cream, milk, eggs, carrots and is stored in large quantities in the liver of fishes and other animals.

This most essential vitamin is obtained from fish liver oil. As many fastidious palates disagree with the smell and taste of cod liver oil, one has to produce this synthetically, for vegetarians as well, from the Lemon grass, that grow so luxuriously in Travancore. It might now be appropriate to label synthetic Vitamin "A" as "Cod Liver Oil without tears". It will not be out of place to say that most exquisite perfumes sold on Fifth Avenue, Bond Street, Champ Elysees or at Connaught Circus of New Delhi, are extracted from this very lemon grass. Its deficiency produces catarrh of the upper respiratory tract and middle ear spaces, some deafness besides night blindness, corneal symptoms etc. Thinking that poor hygienic conditions and absence of Vitamin "A" caused ear discharge experiments were performed by dividing in equal numbers the rates of the same litter in good hygienic conditions. The first lot was given ideal food and found that none of them suffered from illness. The second lot was given food deficient in vitamin A and in them one found many cases of illness of the upper respiratory and ear passages. Dean and Daniel went a step further by placing new born infants in a separate ward, under ideal food and hygienic conditions for two years and found that none of them had suffered from nose or ear disease.

Therefore I suggest that the Government of India should explore the possibilities of growing this grass in other parts of the country as well. This will lead to its easy availability to everyone.

6. **Role of Sulphanamides and Antibiotics.**—Originally medical men used only herbs for treatment of disease. To this were later added metals and non-metals from the inorganic world. With

the advance of the science of chemistry, chemists put their heads together and produced some wonderful drugs, which formed a sort of medical romance of the present century. Sulphanamides came in late twenties and antibiotics in mid forties. Between the two of them, they have offered to the medical world, a vast handle, for dealing with different types of infections.

With the introduction of sulpha drugs (sulphadiazine) our operative work was reduced by 15% and with the advent of antibiotics by further 40%. Sulphanamides are bound to blood plasma but antibiotics are not; on the other hand antibiotics are able to penetrate blood coagulum but sulphanamides do not. Sulpha drugs still have a value in infections with gram negative organisms: Penicillin is now produced in our country at Pimpri. This means that it will now be available to our people at a very cheap cost and thus our people both in town and in the villages will make use of this life saving drug.

We have also a variety of antibiotics e.g. Diamine Penicillin Fortified 1,200,000 (one dose) whose effect lasts a week, so is Penidure. Duplomycin is less toxic than Streptomycin which partially destroys the auditory nerve, in some cases. Other drugs we use are achromycin, chlorostrep, aureomycin 3% ointment Ilotycin, Terramycin Otic or nasal Tetracycline—S. F. Terramycin or achromycin 15 mg. Cortesone and ACTH.

7. **Otic Barotrauma.**—With increasing popularity of air travel we should avoid air sickness by taking Divoamine. Armstrong and Hein in 1937 coined the word 'Aerotitis media' but as there is hardly any infection, we now term it barotrauma, which may be acute or chronic and may affect the ear or maxillary or frontal sinus. The density of the atmosphere which surrounds the surface of the earth decreases with altitude in a curvilinear way. Thus at 18,000 feet the atmosphere is only half as dense as at sea level while at 34,000 feet one-fourth and at 48,000 feet one-eighth. Air Vice Marshal Dickson found deafness in 31% of his cases, deafness and pain 55%, deafness and vertigo in 3%, deafness and tinnitus in 5% and pain alone in 6%. The objective appearances varied from slight tympanic retraction to injection of Schrapnell's membrane. Hearing loss is of conductive type. The treatment is directed to relief of pain and relief of tubal obstruction. Place only sterile cotton wool in the ear, and give deep X-Ray to the tube if necessary.

As our civilian air crafts are now pressurized one does not get this complaint except when one climbs down or is passing through the air pockets. It is therefore that the hostess should not only give a fair supply of sweets for chewing while going up or coming down but also while passing through air pockets. Till the hostess comes please try to yawn or blow the nose as in valsalva.

8. **The Deaf.**—Now we come to the most important part of this Seminar *i.e.* the problem of the "Deaf". Exact figures of this disability are not available in our country in spite of the questionnaire issued by the Deaf Committee to the various hospitals, sometime ago. In statistics taken from New York School Children, this works upto a figure of 4%, while the London figures come upto 6%. I reckon the mean of the two *i.e.* 5% would be a correct figure for most countries.

The Deaf have been classified:—(a) Congenitally deaf, *i.e.* those who are born deaf (b) Adventiously deaf *i.e.* those who become non functional through illness or accident later in life. (c) Hard of hearing though defective in hearing can yet hear with or without an artificial hearing aid.

The deaf should not be referred to as "deaf mutes or deaf dumb" for they have vocal cords and they can laugh, cry and even scream, for this deafness is a mere physical handicap as the soul remains intact.

Rehabilitation is defined as a planned method of treatment designed not only to use surgical treatment but help by lip reading, hearing aids and auditory training.

For the purpose of investigating the cases of hard of hearing or even the deaf, one requires audiology centres at State Capitals, units at district head quarters and some facility at taluka hospitals. It is well known that a very modest programme is better than none at all, but in the long run it hinders creation of a full centre as the Governments all over the world consider them to be sufficient for some needs and therefore are not willing to create full centres on account of poor finances due to the two World Wars.

9. **Audiology Centre.**—Denmark is a very small country compared with any of our part I or II States in the Union of India. Yet, in 1949-52 it has built three centres and if they prove successful will have two more. Figure 2 depicts one such centre at Odense, with a population of 100,000, but draining an

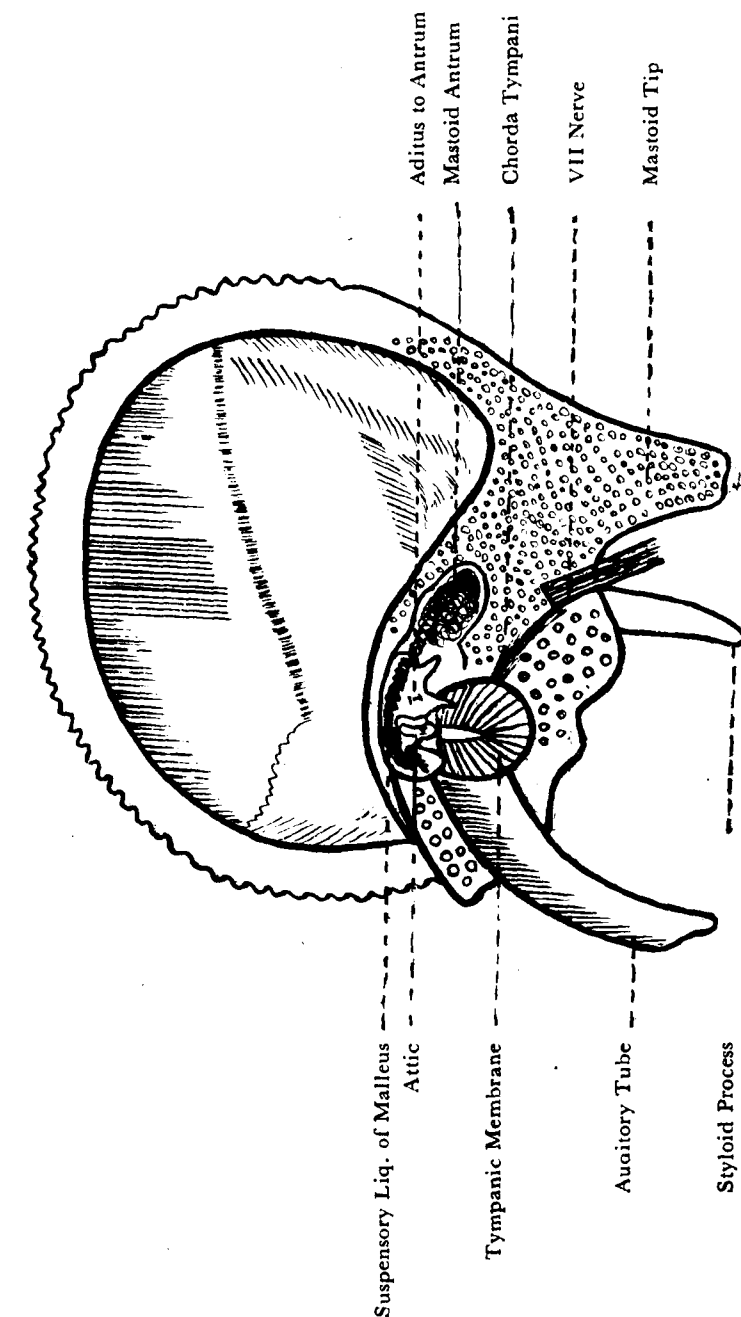


Fig. 1.
The drawing is from a section through the mastoid antrum and middle ear, looking from within outwards, from behind the ear drum.

SEMINAR ON THE EDUCATION OF THE DEAF—MUSSORIE

ORGANISATION OF AUDIOLOGY CENTRE (ODENSE)

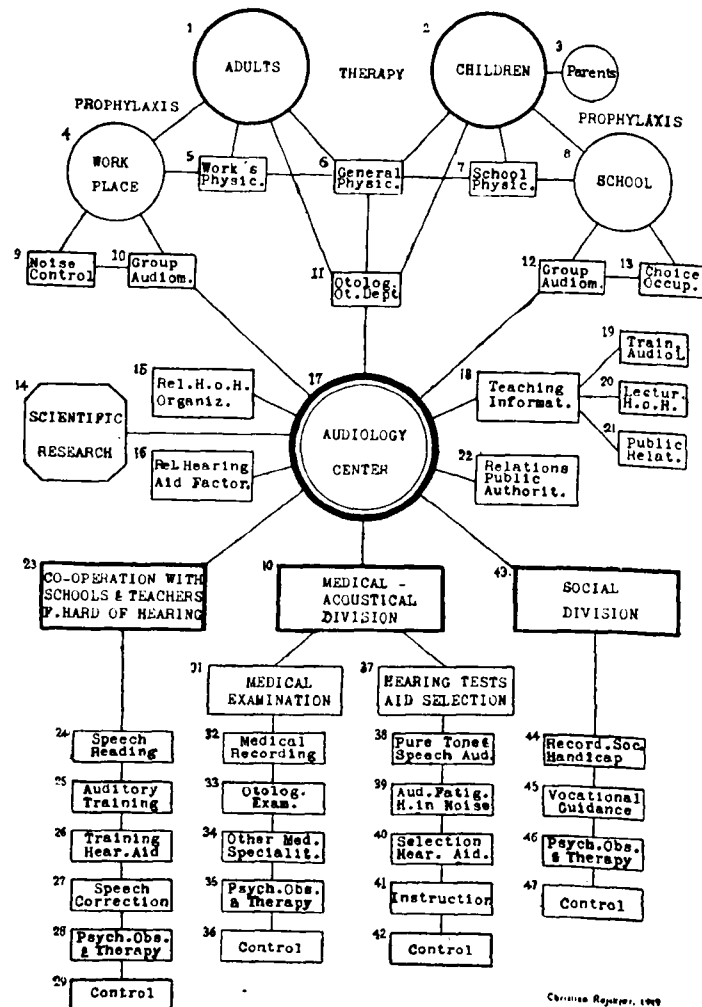


Fig. 2.

area of 70 to 80 K. M. with a population of one million. This is not a University town but has a school for the deaf, and another institution for hard of hearing people. Prof. C. Rajskjaer is in charge of it. He has described in great detail each one of the squares in Figure 2 in *Acta-Otolaryngologica* Vol. XLI: 1 & 2, 1950. You will notice that prophylaxis both at School and the place of work is given a pride of place, so as to avoid many cases of hard of hearing and reduce the damage in others to smaller quantity. Those who need aids like lip reading, auditory trainer and hearing aids will get the benefit early and so lessen the hardship of deficient hearing. I have requested the Mudaliar Medical Advisory Committee to have such a centre added at New Delhi from a splendid gift of the New Zealand Government under the Colombo plan and to have these 47 rooms built on ground floor and leave ample space for research and expansion.

In building the centres, the basic architectural requirements should be given jointly by an otologist and an audiologist, but the final constructional plan should be prepared by an architect competent in acoustics. Here one will require two sound proof rooms which are very expensive to build. It is estimated that a room which will provide 35 decibels of attenuation should cost approximately Rs. 5,000/- a 45 decibels room about Rs. 8,000/- and a 55 decibels rooms with 35 decibel door with sound lock will cost Rs. 15,000/- and 70 decibel room from Rs. 50,000/- to 65,000/-.

The personnel to man such a centre should be judiciously selected and a number of them including research workers given reasonable salaries, so that they should never think of leaving the centre for the sake of improving the family income in our congested and expensive cities. To buy the scientific equipments of such a clinic will cost about \$25,000 (excluding freight insurance 10% and customs duties 31½%) but less for a unit for the Civil-Hospitals and rooms for the taluks hospitals.

10. **Ponder over the Deaf.**—This will do for the hard of hearing and now let us ponder over the deaf and the adventitiously deaf.

In the pre-christian era it was known that in the East e.g. India, Iran and Egypt instructions had been given to individual deaf whose parents were well placed in society. Then in the Greek and the Roman Empires, also the privileged few deaf

apply for work with a friend as an interpreter. Wear a hearing aid if you have one. (5) If you are a lip-reader, do not give an impression of understanding and agreeing when you do not fully understand. (6) Take advantage of competent otologists and hospitals, proper hearing aids auditory training, lip-reading, and speech correction. Do not apply for work with only one string to your fiddle.

12. Problems for Research Workers.—(1) Assessment of hearing under 3. (2) Tests for differential diagnosis of the various kinds of deafness. (3) Intelligence and aptitude of the deaf. (4) Personality. (5) Improving methods of auditory training. (6) Improving hearing aids and inventing new ones. (7) Measurement in speech, lip-reading and language progress. (8) Changes in curricula to fit Nai Talim system. (9) Manualism versus oralism. (10) Merits of day and residential schools. (11) Optimum means for co-ordination of academic and vocational instructions under Nai Talim System. (12) Continued investigation of the effects on deafness, of adenoidectomy, radiation, inflation of auditory tubes, fenestration etc., etc. (13) Effects of Vit. "A" in the prevention of deafness.

13. Deaf Clubs.—Purpose: Rehabilitation which includes facilities for lip-reading. The Deaf person tends to become desocialised and the Deaf Club plus its progeny have the socialisation of the patients as their primary object.

Premises.—There is some diversity of opinion whether these should be provided at the Hospital or elsewhere, the argument in favour of the latter being that the Deaf may cease more readily to forget they are patients.

The room should be comfortable, conducive to relaxation and have a friendly atmosphere.

Membership.—This should preferably not exceed 100 and 60 to 80 is probably better. If increased beyond this number it tends to become unwieldy and less intimate. There is, however, no reason why several should not be formed. The membership may be confined to patients of the hospitals' Deafness Clinic but can be extended to admit any suitable person within a certain circumscribed area.

Organisation.—The aim is for these clubs to be self-governing, once its inception has come about and the club got under way. Some of the Committee members should have connection with

the E. N. T. Department of the Hospital at first at any rate and at the least should be visited frequently by such persons *i.e.* surgeons, assistants, social workers etc. The working Committee may be co-opted at first but should then be by annual election by the members.

Entertainment and Caterings.—Probably best in the hands of a small sub-committee and must be capable of reflecting and putting into effect suggestion ideas and wishes of the members they represent.

They should aim at, at least, one major social evening per month but less imposing events should be arranged more often.

Equipment.—It is a great asset to have an amplifying set with loud speakers and individual ear phones.

Finance.—Some capital will be required but as much as possible should be done by the members themselves by annual fees, whist drives etc.

Rules.—A governing set of rules must be drawn up and there must be an over riding government body to which advice and settlement of any differences can be referred.

14. Otosclerosis and Fenestration.—This is a type of hereditary deafness—manifesting between the ages of 16 and 80 years. One finds excess of pyruvic acid in congenitally deaf suggesting defective carbohydrate metabolism. In Otosclerosis the carbohydrate metabolism defect is in Vit. "B" group.

In the selection of the cases, beware of the self willed patients, who are being operated indiscreetly here, with poor results. Those in whom you see a classical flaming red shimmer of the drum, invariably fail. Results are better in a younger age group, but osteogenic closure is less frequent in patients aged 35 or more. Otosclerotic fixation of the ossicular chain other than the stapedial foot plate is rare. When it does take place stop the operation with the removal of the incus and setting of the flap in position.

It is a postoperative fact that the fenestrated ear does not tolerate middle frequencies of 100 db intensity. An unsuccessful fenestration is a disappointment to the surgeon and the patient, but worse when is complicating with a persistent discharge for several months in very cellular types of mastoids. Histamine may be given to those who get headache and vertigo after operation.

15. **Action of Streptomycin on Vestibular Function**—These are due to a central lesion in the Vestibular nuclei or in the flocculus cerebelli, dentate and fastigial nuclei and medial and lateral vestibular nuclei. Other observers have found body damaged peripheral organ. But quinine causes Cochlear nerve deafness.

16. **Menieres Syndrome**.—In reviewing the literature from histo-pathology of aural vertigo point of view, Nager found endolymphatic hydrops and varying degree of atrophy of the organ of Corti and Cochlear nerve. This accounts for our many variations in medical and surgical treatment.

17. **Ultra-Sound Treatment**.—Prof. Portmann uses an electric generator of great power (I.K.W.L.) capable of producing ultra sounds of 968,400 per second by excitation of piezo electric quartz 3 m.m. thick which can give a power of 100 acoustical watts.

With a tension varying between 0 to 500 volts. His results can be tabulated thus.

Disease	Cases treated	Good Results	Fair	No Results
Perception Deafness Otosclerosis otitis media	...	35%	23%	42%
Tinnities	...	85%	...	...
Deafness with Tinnities	...	Most cases	...	...
Meniere	12	7	2	4
Hay fever	36	22	10	4
Neuralgia	14	8	2	4
Bronchial Asthma	72	76%	13%	11%

18. **Hearing Aids**.—This brings us to the use of modern electric hearing aids, which I had dealt with in my presidential address at Calcutta, (Dec. 1951) which can be referred in the Indian Journal of Otolaryngology March 1952. These aids which were costing about Rs. 575/- for air condition in 1951 and now Rs. 360/- could be brought down to Rs. 150/- as suggested by me to the Union Finance Minister on 21—9—'52 and to the Union Education Minister and his Deaf Committee on 6—10—'52. The chief reasons given are that they are a necessity and not a luxury and that the customs duties and sales tax should be abolished or rebate given to those sets sold through the Audiology Centres or Units of our public hospitals. Sales Tax has now been abolished by Hyderabad, Madras, Punjab and Travancore-Cochin.

These Electric hearing aids in my opinion have been unsatisfactory in our country on account of wide changes in temperature and humidity and want of proper servicing facilities. The first patient for whom I prescribed was in 1926 and the last as I was writing this paper in Sept. '55, I do not think they give value for the money people spend in 85% of the cases. In U. K. they found it not satisfactory in 50% of cases, while in U. S. A. under 10%. What is the reason for variations? Want of Audiology Centres and Units.

An almost universal complaint of seasoned users of hearing aids is that understanding of speech through the instruments is often limited and obfuscated although perception of sound as such seems adequate. Many workers in the past have enunciated and implemented the principle of teaching through auditory stimulation not only partially deaf but also profoundly deaf children to achieve differentiation of elements of speech understanding of words and connected spoken language, depending on the degree and character of hearing loss. It is also noticed that cerebral re-orientation to speech, transmitted through a hearing aid can be improved by systematic acoustic training. S. Richard Silverman found that six out of seven subjects show appreciable gains in understanding of speech as a result of such training programme.

The seasoned workers in the matter of rehabilitation of the acoustically handicapped have found that during the first three years of life the child is able to discriminate and learn various sounds. Therefore, the child, who is born congenitally deaf will hardly talk at all. The child who is partially deaf will

speak as he hears, though the consonants will be missing and the tone defective. Now if the child during the first three to four years of life even though he has learnt to speak, becomes deaf from pathological conditions, one finds rapid deterioration and he becomes totally deaf and loses speech in a year's time. This is not so with adventitious deaf adults, who lose normal tone of speech but never all the speech.

Mrs. Niven (Nee Edith Whetnall), who has had a great experience in the rehabilitation of the deaf, since U. K. supplied free Medrisco hearing aids to its deaf population. She says "when listening becomes strain and causes fatigue, rehabilitation is required." She is of the view that the education of the deaf child should start at the age of eighteen months with a trained teacher in a nursery school. Thence he should go to a special partially deaf units in hearing schools. Whereas the totally deaf children should go to a school of their own, for the educational methods of the three types of schools are different.

Many people do not need hearing aids, but must learn to listen (1) directing attention, (2) focussing on the consonants and forgetting the vowels is a key trick (3) self consciousness of the problem, (4) look to the speakers mouth and (5) see that the light falls on the face of the person talking.

As a rule middle ear deafness needs fitting the aid behind the ear and in nerve Deafness plug it in.

Language coming from the hearing aid is different from that we listen, but one gets used to it. It is wise for the deaf to take a friend to screen the various models available and the following words may be used.

(a) Home, phone, shone ; (b) Shoe, few, view ; (c) Grate, fate, state ; (d) Mean, dream etc. etc.

Then check on the cost, size weight, and appearance. Spot the working qualities re: sensitivity, especially as to distinctiveness background, noise, gain or power to bring in faint and distant sounds, fidelity or naturalness of tone Tolerance of loud, sudden sounds without painful or shocking jar. Ease of care and cheapness of battery. Ear mould to be individually made. Some one should read aloud while the Aid is on. You will have to learn the language sounds through the Aid anew. If it then worries, see the doctor.

19. **Smoking and Cancer of Ear and Throat.**—Grahm, Wynder and Croninger of Washington proved the presence of a carcinogen in the cigarette smoke by producing cancer in 44% of the mice, whose skins were painted with mild solutions of the cigarette smoke. No cancer found in the control series. On the other hand U. K. Scientists who painted mice with nicotine for 18 months could not produce cancer. This suggests that cigarette paper is more important factor in the U. S. A. experiments.

Dr. Rolf (Buenos Aires) from the study of 78,000 patients concluded that tobacco smoke had Benzpyrene, which is carcinogen.

Experiments by the American Medical Association show that filters made from cotton crepe, paper fiber, sulphur, activated charcoal micronite, are a mere illusion and not safe. The term denicotinised is a misnomer, for the cigarettes are not nicotine Free.

W. H. O. (Dr. Pasna) says the following factors have caused increase in the mortality rate from lung cancer :—

1. An increase of population in 40-80 age group.
2. Drop in the mortality from tuberculosis in Europe.
3. Improvements in diagnostic technique.
4. Increase in the consumption of cigarettes.

Cancer of the ear is comparatively rare for I have had only 4 cases in 30 years. The reason probably is that few smokers bring out the smoke through the nose. It is in this series that the smoke finds its way via auditory tubes to the ear. Last case I had was of a Delhi Doctor 3 months ago who has been a heavy smoker for 25 years. A Gujarat lady who had been chewing tobacco in pan (12-14 per day) got cancer of the tonsil. Out of six cases of cancer of the larynx four were smokers, who have lost their voice after the operation. None of my cases was a Huka smoker.

With the inflation of the Second World War, more people are smoking cigarettes and cigars as such they are liable to circulatory diseases and finally a large number of the former to the cancer of the larynx and lungs and the later to that of the base of the tongue. Pipe smokers get cancer of the lip.

In a recent brilliant article by Sanghvi, Rao and Khanolkar, on the effects of smoking and chewing tobacco in relation to cancer under Indian conditions have shown that chewing tobacco was associated with cancer of the oral cavities. That the combined habit of smoking and chewing was associated with cancer of the Oropharynx and Oesophagus.

The common Indian form of smoking is known as "Bidi" in Western India or "Biri" in Northern India. In this tobacco flakes are rolled in dried leaf. The article has emphasised that Biri resemble in their effects, European Cigars rather than Cigarettes.

20. **Rehabilitation of the Laryngectomised.**—It is a shock to them when we say you will lose voice, now such cases could be fully rehabilitated, provided our Union and State Governments train speech teachers and employ at the Audiology centres or at E. N. T. Units.

To teach them oesophageal speech, I suggest that a room of at least 10×15 feet be furnished with a desk, dozen chairs and teapots. These patients usually require carbonated drink such as ginger ale, or coca-cola to assist. The teachers may be recruited in the scale of 200-5-250-10-300.

21. **Resolutions.**—Shri Chairman, before I close, I would summarise in a brief resume salient points which form the basis of this talk, with the request that, they be placed before the seminar, for favour of their kind consideration.

(i) **A Model Audiology Centre.**—This Seminar recommends that the Government of India should set up, at an appropriate place, comprehensive audiology centre consisting of about 47 rooms to provide for prophylaxis at work and school, noise control, group and individual audiometry, otological rooms, teaching and information rooms, hearing aid rooms, speech therapy department rooms, social division etc. A diagram showing an ideal audiology centre accompanies this resolution. (Fig: 2).

This Seminar further recommends that smaller audiological units should be attached to all teaching hospitals and a speech therapist should be appointed in each civil hospital.

(ii) **Free Distribution of Vitamin 'A'.**—This Seminar is of the view that Vitamin A therapy plays a very important part in the prevention of diseases of the upper respiratory tract and the

ear. In view of this, it recommends that the Central and State Governments should make arrangements for free distribution of Vitamin 'A' to all school going children and expectant mothers.

In the opinion of this Seminar, one of the most important sources of Vitamin A is lemon grass normally grown in Travancore-Cochin. This Seminar feels that it will be worthwhile to explore the possibility of growing this grass in other parts of the country. It therefore recommends that the Union Ministry of Agriculture should consider the desirability of establishing Model Farms in different parts of the country in order to grow this grass so that Vitamin 'A' may be available in larger quantities to everyone.

(iii) **Research on Fenestration Cases.**—This Seminar recommends that the Government of India should give an adequate grant to the Association of Otolaryngologists of India (E. N. T.) or to some suitable organisation in order to enable it to carry out research, designed to ascertain the results of fenestration operation in this country.

(iv) **Rehabilitation of Laryngectomised Patients.**—This Seminar believes that cancer of the voice box is becoming a serious menace in many parts of this country. It deprives the victims of the capacity to talk. But this Seminar is of the opinion that given the necessary training in oesophageal speech the capacity to talk of these patients can be fully restored in a few months time.

This Seminar therefore recommends that oesophageal centres should be opened in suitable places as early as possible.

(v) Exemption be given to the Artificially Hearing Aids and their accessories from the customs duties and sales tax.

(vi) Deaf Clubs be started at convenient centres.

(vii) Advisory Councils for the Handicapped should be appointed in all the Major States on the lines of the National Advisory Council.

(viii) Zonal Nursery Schools be started for three year olds.

(ix) In the Balanced Curriculum classes be limited to ten pupils.

(x) The Deaf could be employed in all occupations except the Medicine and Law, but certain trades be reserved to them or percentage of places be allotted to them.

(xi) Poor Deaf should be provided with free hearing aids.

(xii) Arrangements be made for propaganda by lectures, radio, cinema show etc. regarding the prevention and cure of deafness.

22. Before I resume my seat I will like to take this opportunity of expressing my heartfelt thanks to the Union Education Ministry for allowing me the privilege of this talk. I must thank you Shri Chairman, Shri Lal Advani and to fellow-delegates for listening so patiently to a talk of this character which is largely of a dry technical matter. But the patience with which you have listened to me is an expression of deep interest that you all have in the amelioration of this unfortunate malady.

I would also like to thank my colleagues and others whose papers I have incorporated, (See references) but special mention should be made of Dr. Alton Ochsner, Dr. Noe Bergman, Prof. Eving, Mr. R. S. Silverman, Dr. R. H. Lulla and the Watumull Foundation. I hope to be excused if by oversight any reference is omitted.

REFERENCES.

1. Amesur, C. A: Lip-Reading I. J. O. Oct. 1950. Rehabilitation of the Acoustically Handicapped I. J. O. December 1952.
2. Dalziel Dickson, Air Vice Marshall: Upper respiratory infection in Air travel. The Practitioner Dec. 1954.
3. Hear Again: I. L. to days Health 33. 24-5 May 1955.
4. Ochsner, Dr. Alton: Smoking and Cancer (Julian Messner, Inc.)
5. Portmann, Prof G. Ultra-sound Treatment in E. N. T., I. J. O. Sept. 1953.
6. Rojskjaer, C: Acta Otolarynga, Vol. 41, 1 and 2, 1950.
7. Whetnall (E) Occn: Therapy and Rehal: Dec. 1950.
8. Year Book of Eye, E. N. T. 1950-54.
9. L. D. Sanghvi, Rao and V. R. Khanolkar: Smoking and Chewing of Tobacco in relation to cancer of the upper Alimentary track: B. M. J. May 7, 1955.

DISCUSSION

Shri Basrurkar (Chairman).—As a child my parents were giving me lemon grass in tea once a week, we not knowing about Vitamin 'A' in it. Could it serve in any form to the public? Dr. Amesur replied that it could be given in tea at least twice a week. The taste could be cultivated as in 'Foodna' tea. As the lemon grass planters are earning valuable foreign exchange, the price is high and the supply is short. I suggest a

model farm for Deaf. Co-operative Societies should be subsidised in the beginning by our Union Agriculture Ministry to grow this lemon grass.

Shri Lal Advani, New Delhi.—Does tonsillitis cause deafness? Dr. Amesur: Not by itself. But if the inflammation spreads to the back of the nose, then naso-pharyngitis causes deafness.

Shri N. Chaturvedi, M.L.C. (Lucknow).—Why are we expected to use cotton plugs in the aircraft? In my Uttar Pradesh school I am given a grant of Rs. 5,000/- for having an ear clinic. When could I see you to have some ideas of its furnishing and equipment? Dr. Amesur: To avoid jarring, one uses cotton wool in the outer ear. It was very useful in the late twenties and early thirties because the engine noise of the York planes and early Tata plane was tremendous. But now as the civilian aircraft is pressurized, one does not need cotton plugs except when the plane passes through air pockets. I shall be delighted to give you information you want tomorrow at lunch time. Here is my 30 page article on Rehabilitation of the Acoustically Handicapped, which will give you some ideas, so that you are better fitted to discuss the same. Shri Chaturvedi thanked for the article.

Shri Raja Rao (Mysore).—Does quinine cause ear deafness and what is its treatment?

Dr. Amesur.—Quinine has a selective action on the cochlear nerve, and so the deafness. It cannot be cured. It is in a case like this when I prescribed an electric Hearing Aid in 1926 at Karachi. He is now employed at New Delhi but sees me at Bombay. His experience of various hearing aids is very poor, because of want of servicing facilities etc. The deafness cannot be cured, but it can be prevented by using other antimalarial drugs e.g. Paludrine.

Shri Kuppaswamy (Hyderabad).—Is syringing the ear for wax harmful? Dr. Amesur:—If metal syringe is used it is. A Swiss Officer of I.C.I., Bombay got perforation of the drum from syringing the ear by a general Practitioner. It took eleven weeks to heal the perforation after zinc ionization, Vit. A. etc. I use Tillys rubber syringe.

Dr. Choudhari (Mussoorie).—Does removal of the tonsils remove deafness? Dr. Amesur: Never. But if adenoids be present and removed, it is the removal of adenoids which cures the deafness caused by tubal obstruction.

Shri Lal Advani (New Delhi).—What for are you advocating diomine? Dr. Amesur: It stops the vomiting due to air, sea or mountain sickness besides that of pregnancy. It also helps in preventing the same along with giddiness if one tablet is taken ten minutes before climbing.

Dr. Garg (Mussoorie).—What bad effect the swimming and diving produces? Dr. Amesur: If the drum is perforated ear plug should be used before swimming, otherwise chlorine or salt of the water entering the ear may set up otitis media. Diving on the other hand sends the water through the tubes and causes inflammation of the middle ear and drum.

Dr. K. T. George (Kunnamkulam).—A deaf person had two normal daughters who had normal children, but two grandsons of these two daughters are deaf. How do you explain? Dr. Amesur: By Mendelian law these normal children of the Deaf had dormant deaf characters, which came in certain proportion in these off springs who are congenitally deaf.

Dr. Garg (Mussoorie).—How do you treat the auditory lymphoid tissue? Dr. Amesur said sometimes the lymphoid tissue is inside the auditory tube, causing its obstruction. This can only be removed by deep X-Ray therapy never exceeding 1400 r., spread over a fortnight.

In 10% of the cases of adenoidectomy some recurrence of lymphoid tissue takes place. It is then that one considers using radium applicator, for the lymphocyte is very susceptible to the beta and gamma rays of this applicator. One course of irradiation means three treatments of 12 minutes on each side of the back of the nose with the 50 mg. radius applicator at intervals of a fortnight.

Chairman.—I wish to thank Dr. Amesur for the most interesting talk he has given this evening. We appreciate it very much, because he made this rather dry subject into a very interesting one. On behalf of all of us I should like to thank Dr. Amesur for this interesting and informative talk.

The first four Resolutions were accepted by the Seminar in toto; the remaining eight were accepted in principle.

On the last day of the Deaf Seminar, the Seminar accepted the first four resolutions in toto and the remaining in principle.

As we go to the press, I am delighted to learn that the fifth resolution re-exempting the Hearing Aids from customs duties, has been accepted by the Union Government and import duties thereon have been removed.

The Sales-tax on them, being a local tax, is only abolished by the Governments of Madras, Hyderabad, Travancore-Cochin, the Punjab and Andhra. We are grateful to both the States and the Union Governments for this.

NOTICE TO CONTRIBUTORS

1. Original Articles are accepted on the condition that they have not been published elsewhere.
2. Manuscripts should be typewritten, on one side only of the paper and well spaced.
3. Orders for reprints should be sent along with the articles.
4. Editorial communications may be addressed to Dr. P. V. Cherian, 5, Victoria Crescent, Egmore, Madras.

The National Advisory Council for the Education of the Handicapped in India

BY

Dr. C. A. AMESUR, M.S. (Lond.)

For the past few years it has been the earnest endeavour of the Union Education Ministry of finding ways and means to quicken the pace of rehabilitation of the handicapped people. With this object in view, the Committee on deafness was appointed in 1952. This Committee consisted of Dr. S. P. Roy, Dr. P. V. Cherian, Dr. A. T. George, Shrimati Evelyn Khan and Shri A Sen, the last three being the Principals of the Deaf Schools situated at Calcutta, Lucknow and Delhi respectively. The terms of reference of the Committee were to assess the causes and extent of deafness in India and to recommend measures for the prevention of deafness and for the educational rehabilitation of the deaf. The Committee met only once—on the 12th and 13th January 1955 and submitted its recommendations.

Thereafter Shri Lal Advani of the Union Ministry of Education—a handicapped person himself visited United Kingdom. He surveyed the Blind Welfare in the country and embodied his impressions in a booklet form styled 'Blind Welfare in the United Kingdom'. This booklet was published by the Union Ministry in 1954. It speaks volumes for the zeal of Shri Lal Advani for the cause of the blind. He has put forward many valuable suggestions and I do earnestly hope that the Advisory Council would approve and recommend quite a number of them for implementation in our Second National Five Year Plan.

The Union Ministry of Education then held a Seminar for the welfare of the Blind at Mussoorie from 18th to 25th April 1955. This seminar submitted a long list of resolutions comprising 15 typed pages. This was followed by another seminar, this time for the benefit of the deaf also at Mussoorie, from 19th to 24th September 1955. Among the invitees apart from the staff of the Ministry of Education were teachers and social workers in the cause of the deaf. I was the only medical man invited. I submitted 12 resolutions which were all accepted.

Presented at the Eighth Annual Conference of the Association of Otolaryngologists of India, held at Trivandrum on 30th December 1955.

NATIONAL ADVISORY COUNCIL-EDUCATION-HANDICAPPED IN INDIA 137

These resolutions together with the talk I gave at the deaf seminar are printed elsewhere in the December 1955 issue of the Indian Journal of Otolaryngology. The Seminar for the deaf submitted 22 typed pages of recommendations.

The following appeared in part 1, Section 1, of the Gazette of India dated 5th October 1955.

GOVERNMENT OF INDIA MINISTRY OF EDUCATION

U. F. 34/55. D2

Dated, 5th October 1955.

In pursuance of the Government of India Ministry of Education Resolution No. F.1-34 55 D2 dated 1st September 1955, the Government of India have been pleased to appoint the following on the National Advisory Council for the Education of the Handicapped with effect from the date of issue of this notification.

1. Prof. Humayun Kabir, Secretary, Ministry of Education.....Chairman.
2. Prof. K. C. Saiyidain, Additional Secretary, Ministry of Education.
3. Lt.-Col. C. K. Lakshmanan, Director-General of Health Services.
4. One representative of the Central Social Welfare Board, New Delhi.
5. Shri P. M. Alpaiwalla, President, National Association for the Blind, Bombay.
6. Shri Eduard Jonathen, Principal, School for the Blind, Palamcottah (S. India).
7. Shri U. A. Basrurkar, Hon. Secretary, Blind Relief Association, New Delhi.
8. Shri P. M. Advani, Banaras.
9. Shri Savitri Nigam, M.P., New Delhi.
10. Shri N. C. Chaturvedi, M.L.C., Hon. Secretary, Deaf and Dumb School, Lucknow.
11. Dr. S. N. Banerjee, Principal, Deaf and Dumb School, Calcutta.
12. Shrimati Evelyn Khan, Principal, Deaf and Dumb School, Lucknow.
13. Shri A. C. Sen, Principal, Lady Nyoce School for the Deaf and Dumb, New Delhi.

14. Bipin Behari Choudhury, Principal, All Orissa Deaf and Dumb School, Bhupaneswar.
15. Dr. C. A. Amesur, M.S. (London), E.N.T. Specialist, Bombay.
16. Shrimati Kamala V. Nimbkar, Bombay.
17. Mrs. Fatema Ismail, Bombay.
18. Dr. C. D. Agarwal, Lecturer in Orthopaedics, Medical College, Agra.
19. Dr. Dhiren Kiri, Joint Hon. Surgeon, Orthopaedic Department, Irwin Hospital, New Delhi.
20. Shri B. D. Bhatia, Lecturer in Psychology, College of Nursing, New Delhi.
21. The Director, Pilot Centre for the Education of Juvenile Delinquents Hazaribagh, New Delhi.
22. Dr. K. R. Masani, Bombay.
23. Dr. C. M. Bhatia, Director, Bureau of Psychology, Allahabad, U. P.
24. Dr. R. K. Bhan, Deputy Education Adviser to the Government of India.....Member, Secretary.

(By Order)

R. K. BHAN,

Deputy Educational Adviser.

The Publisher,

Gazette of India, New Delhi.

No. F. 1. 34/55/D2.

New Delhi, dated the 5th Oct. '55.

Copy forwarded for information to all the Members of the National Advisory Council for the Education of the Handicapped.

Copy forwarded for information to Health Secretary, Delhi.

Copy forwarded for information to the Secretary, Education Department, all the State Governments.

Copy forwarded for information to the Secretary, Department of Parliamentary Affairs, New Delhi.

Copy forwarded for information to the Secretary, Central Social Welfare Board, New Delhi.

(By Order)

R. K. BHAN,

Deputy Educational Adviser.

5—10—'55.

Thereafter I received an Express Telegram, which read as follows:—"Kindly send immediately your proposals for consideration by The National Advisory Council for the Education of the Handicapped—EDUCIND". On this I sent in nine typed pages in addition to the full page of the diagram of the audiological Centre at Odense. This is virtually a reprint of the talk I gave at the Patna Meeting in December 1952, and published in the Indian Journal of Otolaryngology of the same month. The diagram for the audiology centre is reproduced in the same copy of the Journal opposite page 12.

To my friend Professor C. Satyanarayana of the Stanley Hospital, Madras, I am greatly indebted for the promptitude with which he worked out at my request the cost of building such a centre at Madras with his usual thoughtfulness and thoroughness. The cost of construction together with an approximate recurrent annual expenditure is given herewith in a tabulated form:—

The Building	...	Rs. 3,00,000
(It is expected the land for construction would be provided free of cost by respective States.)		
Two rooms (Sound proof)	...	Rs. 65,000
Equipment (Scientific)	...	„ 2,00,000
Furniture etc.	...	„ 65,000

Recurrent annual expenditure:

7 Medical personnel (including a Director)	...	„ 5,500 per month
103 Graduates non-medical...	„	25,750 „
50 Clerical staff	...	„ 6,200 „
20 Class four staff	...	„ 2,000 „
Total for twelve months	...	„ 39,450 × 12 : Rs. 4,73,400

I also submitted the cost of running a Deaf Club at Rs. 17,439 per year; and a State Deaf Council at Rs. 55,000 provided rent free quarters are supplied.

The first meeting of the Council was held on 13th October 1955, at 11 a.m. in the Council Hall of Lok Sabha; on the following day we met at the Parliament House, first floor, room number 53. When I left Bombay, I had counted upon a stay of at least four working days in Delhi for the completion of the ten point Agenda, and the very many recommendations of the Blind and Deaf Seminar, but Professor Humayun Kabir's smiling face and persuasive manners cut short the period by half. Four

had private instruction. But in general the condition of the deaf people on the whole was pitiable. Herodotus speaks of the deaf son Croesus. Hipocrates makes reference to the deaf as a class. Plato and Aristotle mention the deaf and consider them incapable of being educated. Archigenes spoke of them in the first century and St. Augustine spoke of them with the possibilities of their having a faith. Bede in 691 A. D. through Bishop John of York performed a miracle when he taught lip-reading to a deaf.

Dr. Cardano an Italian attempted the principles of teaching manual alphabet. But Spain gets the credit for giving effective tuition to the deaf. Pedro Poce de Leon taught them lip-reading in 1555. Then came the famous discovery of auditory tube by Eustachious in 1563. At this period Dr. Bulwer in England wrote, "the natural language of the Hand" and "The Deaf and Dumbmans Friend". Then various European Countries followed. The U. S. A. had its first School in 1800; and now has compulsory and free education in all the States; and the Schools are in all but two of its States. Japan has made great progress in the present century. Its Central and local Government defray all the expenses of looking after their education and subsequent rehabilitation. In India we have a revival of interest and forty two small schools, since the beginning of the present century.

The sins of the parents (syphilis as a rule), have fallen on the congenitally deaf child or his own karma, but this is not so with the hard of hearing child. His ailments could have been detected early by the parents from earache, infected throat and frequent colds. Other symptoms include inattention, frequent requests for repetition of spoken words, cupping the hand on the ear, cocking the head, copying dictation, indifferent responses to music, abnormalities of speech, dreaming and poor school reports. At home not to be overlooked are truancy, lying stealing and a typical behaviour only to attract ones attention.

After this when the parents bring the child the family doctor should screen with a watch tick the ear, nose and throat examination. At this stage it is better to inform the parents in an intelligent and tactful manner that as a result of screening one finds impaired hearing of the child to be well again. Here he should be given a complete purtone audiometer test in sound proof room and thence follow the routine as mentioned in Figure 2. In school he should be given the roving seat and lip-reading started. Auditory training should be given to the

wearers of corrected artificial aids. They should be encouraged to join extracurricular activities like the sports, boy scouts etc. In addition Mahatma Gandhi's Nai Talim Vocational Classes be given, so that when he grows up, he has a useful trade to fall back for his living.

What have the blind, the cerebral paralysed the hard of hearing, the crippled (polio-cases) and other handicapped, in common? Thus they have a normal approach to education, even though mechanical devices such as hearing aids may be called into use. The sole exception in the ranks of these handicapped but educated is they are entirely dependent on ability to hear. To the deaf, all that reaches the mind through the avenue of the ear is lost. Because of this unique character of this handicap the deaf child should be excluded from legislation covering other types of physically handicapped. Therefore to give him a square deal, special legislation should be enacted to give him free compulsory Nai Talim suited to his needs. To do this is common sense, to do otherwise is not only to court disaster but waste time and lives.

11. **Social Workers** or field agents have to answer many questions. Some of them are:—

(1) Does he need medical or surgical treatment? This can only be answered by medical and physical examination and avoidance of tension, fatigue nervousness etc.

(2) Does he want employment? He should avoid employment in damp places great heat or noise—As a hard of hearing person rarely recognises his own voice defects and over rates his lip-reading. The excellent by products of lip-reading are "Self reliance, a better understanding of human nature, and a diminishing sensitiveness and an inferiority complex". If lip-reading helps to accomplish this, then the social worker will be better able to find them jobs.

(3) Does he want an hearing aid?

(4) Does he need training?

The following are a few of the hints which should be given to the deaf person who is after employment, (1) Do not be too quick to change a job. (2) Learn how to fill in correctly the job application form. (3) Tell the employment office interviewer what you can do and do not harper on your bad luck. (4) Do not

Sub-Committees were formed to consider and allot priorities to the various recommendations of the two Seminars for 1956-57. These Sub-Committees were constituted as under :—

The Deaf Sub-Committee :

Dr. C. A. Amesur, Dr. S. N. Banerjee and Shri S. C. Sen.

The Blind Sub-Committee :

Shri U. A. Basrurkar, Shri E. Jonathen and Shri P. M. Advani.

The Mental Sub-Committee :

Shri M. N. Bhatia.

The Orthopaedic Sub-Committee :

Dr. D. Kiri, Dr. G. D. Agarwal and Shrimati Kamala V. Nimbkar.

But for Shri Lal Advani's guidance, the Blind and the Deaf Sub-Committees could not have produced the results in such a short time. We co-opted him in solving our problems. The undermentioned nine point programme was submitted by the deaf sub-committee :—

PROGRAMME FOR 1956/57.

1. A suitable uniform syllabus for schools for the deaf should be finalised.
2. That a suitable uniform syllabus for training colleges for the deaf should be finalised.
3. A start should be made with the establishment of a comprehensive audiological centre, at suitable place so that it should be completed in about three years time.
4. A start should be made with the establishment of a technical training centre for the adult deaf.
5. A beginning should be made during the first year with the establishment of a model school for deaf children with a clinic for the ascertainment attached to it.
6. Whenever possible State Governments should encourage or establish the establishment of clubs for the deaf.
7. At least one employment unit for the deaf should start functioning during the first year.
8. With effect from 1956/57, all State Governments should be advised to give grants in aid to all the recognised schools for the deaf to the tune of two thirds of the audited expenditure.
9. At least one pamphlet on the care of the young deaf children should be brought out during 1956/57.

(Sd.) C. A. AMESUR,
S. N. BANERJEE & A. C. SEN.

The work done by the advisory Council can be summarised as under :—

The programme envisaged for the near future is fourfold ; establishment of the model schools for the blind and the deaf, sheltered workshops for the blind, employment units for obtaining useful employment for such persons in ordinary industrial and commercial concerns and appointment of special officers in employment exchange to assist the handicapped in finding employment.

A draft syllabus for a short training course for the blind was approved by the Council.

The Council realised that very little had been done in the past for educating and training of the handicapped. The Council suggested to the Union Government, that a sample census of the handicapped should first be worked out and placed before a Committee who should review the whole question of education and training of such persons on the basis of the census finding.

For the crippled and other physically handicapped, Council requested Mrs. Kamala V. Nimbkar from Bombay to submit suggestions to be placed before next meeting of the Council.

The Council also approved Education Ministry's programme with minor modifications to be included in the Second National Five Year Plan.

A Standing Committee to advise the Union Government for implementation of the programme suggested by the Council was then formed and comprised :—

Professor Humayun Kabir—(Chairman Ex-Officio)
Dr. C. A. Amesur.
Dr. C. M. Bhatia.
Dr. S. N. Banerjee.
Mr. U. A. Basrurkar.
Mrs. Kamla V. Nimbkar.
Dr. R. K. Bhan—(Ex-Officio Secretary).

Most of my colleagues will be able to recall my advocacy of the freer use of Vitamin A, as a preventive measure against deafness in children, as well as the resolution unanimously passed by us at our annual conference at Patna (1952) reproduced here for ready reference :—“Resolved that the Union Government be requested to make arrangements for free distribution of Vitamin A, to expectant mothers and children in deserving cases: This resolution was put by me at the deaf Seminar at Mussoorie in 1955 and unanimously carried.

Before I close, I would like to record an interesting development that has taken place in the production of Vitamin A, on a commercial scale. This vitamin stored in fish liver and fish oil has hitherto been its main source of supply.

Lately it has been shown that in the hillocks and dales of North Travancore, on the South West Coast of India is grown an ordinary neglected grass in wild profusion, known as 'Lemon Grass'. Few of us were aware that this oil was the raw basic material of some of the World's most enchanting scents and perfumes, sold in the most fashionable parts of the World. Modern science has and is exploiting to the full the value of this neglected grass. It has succeeded in producing from it a galaxy of perfumes for the fashionable, cod liver oil without tears for the fastidious, insecticide of a high order against the harassment of the madame mosquito and pharmaceutical balms for the common man.

Government has raised the status of this grass from that of a wild plant to one, which requires scientific attention. Twenty acres of experimental research farm has been built at Odakkali. There are 35,000 acres of lemon grass land which give 736 tons of oil, worth over one crore of rupees, which is exported. I understand that an embargo has been placed on the export of this oil and that steps are being taken to bring in large areas of land under cultivation of this grass, wherever climatic and soil conditions would permit. If this experiment succeeds, Vitamin A should be available in the country at a very low cost.

About the time we were holding the New Delhi meeting Prof. A. W. G. Ewing was working for a week as a member of an international Committee on the problems of the deaf child (i.e. organized by the World Health Organisation and Unesco, in Geneva. There was general agreement on certain points:—

- (1) That the aim of all special education for children suffering from impaired hearing, to any degree, should be rehabilitative. That is, that it should be to fit as many children as possible for attendance at ordinary schools, at some stage during their school careers, and all deaf children for living with ordinary people.
- (2) That the best years in which children with impaired hearing can learn to talk, are from the ages of one to five years.
- (3) That a majority of children, who have hitherto been described as deaf, or partially deaf, can benefit from audiological treatment and that most of them can become, to a large or very considerable extent, reliant on hearing with the help of vision.

- (4) That, in the training of teachers of the deaf, it should be ensured that all teachers of the deaf gain experience and study the development of ordinary children; that they should become familiar with every kind of provision that is made in their countries for the educational training and treatment of children with impaired hearing (including work in audiological clinics, nursery schools for the deaf, where they exist, schools for the partially deaf and schools for the deaf) and that all these teachers of the deaf should have training on a full-time, and not on an in-service basis.

It was reported from the International Labour Organization, that deaf people have been found to follow a very wide range of occupations. Therefore they agreed that as far as possible, ex-pupils of the schools for the deaf should be helped to acquire training in occupations with ordinary people and not in separate, segregated institutions.

There is almost universal agreement among authorities responsible for education, that special educational treatment for children with impaired hearing and for other handicapped children, should be provided, as soon as possible, with 100% support from Governments and that dependence on charitable support is unsatisfactory, and as far as possible to be avoided.

Prof. and Mrs. Ewing agree with us that, in all this, the best beginning would be made in the establishment of an audiological clinic with which a model school for young children with impaired hearing be associated.

Before I resume my seat I will like to take this opportunity to impress you, my colleagues, the necessity to train the medical personnel required to man the Audiological Centre and school clinics.

Ladies and gentlemen, I must now give you a wonderful news. Through the efforts of our Chairman Prof. Humayun Kabir, the Education Ministry has succeeded in persuading the Finance Ministry in removing the import duties on electric hearing aids. Now please prescribe them generously, for their selling price has been halved. From the applause, I know that you wish to join me in thanking the Union Government for this bold step.

I am grateful to Prof. A. W. G. Ewing, Mr. R. S. Silverman, and Dr. R. H. Lulla for the help given in this matter from time to time.

Presented at the Eighth Annual Conference of the Associated of Otolaryngologists of India, held at Trivandrum on 30th December, 1955.

Naso-Pharyngeal Fibroma

(Report of 7 Cases of Naso-Pharyngeal Fibromas)

BY

Drs. SOHAN SINGH & P. CHATTERJEE,
Irwin Hospital, Delhi.

From 15-5-55 to 2-9-55

1st CASE

Mohindar Singh, Male 17 years, labourer, was admitted with complaints of profuse bleeding from the left nostril off and on for 2 months, nasal obstruction and headache for 1 year. He was brought to the hospital with severe epistaxis after an attempt to remove the growth outside.

Locally showed a growth filling up whole of the left nostril with areas of haemorrhage and slough over it. Growth was firm and bled easily on touch. He had marked bulging of the palate and a large portion of the growth was filling up the nasopharynx. Systemically showed no abnormality. B.P. 110/70 mm. Hg.

Investigations.—Hb. 7 Gms. (Brought to 9 Gms. before operation.) R.B.C. 3.5 Millions. Total W.B.C. 14,500 (P. 74%, L. 24%, E. 2%) Urine normal. W.R. negative. Chest clear. X-Ray of the face showed a mass in the left nostril and nasopharynx. Paranasal sinuses clear.

Treatment.—Growth removed by Trans-palatal route (Wilson's technique of temporary palatal fenestration) Growth was nearly of the size of a small orange 900 C. C. blood transfusion given. Recovery uneventful. Had post operative Deep X-ray therapy, free from symptoms so far.

2nd CASE

Manohar Singh, Male 20 years, Teacher. Admitted with history of epistaxis off and on 2 years, nasal obstruction 1 year. Already operated twice through the nose but little improvement. Systemically no abnormality. B.P. 110/80 m.m. Hg.

Locally showed a pinkish, smooth, globular tumour filling up the left side of the naso-pharynx. Very firm in consistency and bled easily on touch. Anterior rhinoscopy showed a small tumour mass in the olfactory cleft. Tumour was approximately of the size of walnut.

Investigations.—Hb. 12 Gms. R. B. C. 4.7 millions. Total W.B.C. 7,800 (P. 65%, L. 32%, E. 3%). Urine normal. W.R. negative, Chest clear. X-Ray paranasal sinuses clear.

Treatment.—Growth removed by temporary palatal fenestration. Had post-operative deep X-Ray exposures. Free from symptoms yet.

3rd CASE

Sukhram, Male 21 years, Labourer. Admitted with the history of epistaxis 1 year, pain and swelling right cheek 1 year. Difficulty in breathing and swallowing 1 month. Gradual change of voice.

Locally there was a pinkish mass completely filling up the right nostril with areas of haemorrhage over it. Palate was pushed down. Huge ulcerated mass with areas of slough, and haemorrhage on it present in the naso-pharynx. Fullness of the right cheek and gingivo-labial sulcus. The infra temporal region with prominent veins over it. Marked deviation of the nasal septum to the left. Systemically nil abnormal. B.P. 110/80 mm. Hg.

Investigations.—10 Gms. R.B.C. 3.8 millions. Total W.B.C. 7,300 (P. 67%, L. 32%, E. 1%). W.R. negative. Urine normal. Chest clear. X-Ray face showed a huge mass filling up the right nostril and extending and obliterating the whole of the right side of naso-pharynx. Also showing destruction of the right lateral wall of nose and bony erosion of the outer maxillary wall right side. Conclusion of the Radiologist-Malignant growth right Antrum.

Treatment.—The part of the tumour present in the nose and the naso-pharynx was separated bi-manually and removed through the nose and naso-pharynx and the antral part removed by Denker's operation. He also had a course of irradiation. He is free from symptoms so far.

4th CASE

Bela Ram, Male, 20 years. Farmer. Admitted with the history of epistaxis off and on, difficulty in swallowing 2 months, Tinnitus and deafness 2 months. He had already been operated in this hospital in 1954 by Moure's lateral rhinotomy.

Local examination showed a small pinkish tumour in the right nostril, posteriorly the mass had typical variegated appearance and was occupying the right choanae. A scar of the last operation was present. Deflected septum to the left. Systemically nil abnormal. B.P. 115/75 mm. Hg.

Investigations.—Hb. 9 Gms. R. B. C. 3.5 millions. Total W. B. C. 9,200 (P. 60%, L. 37%, L. monos 2%, E. 1%) Urine normal. W. R. negative. Chest clear. X-ray sinuses revealed right maxillary sinus opaque, destruction of right lateral wall of the nose.

Treatment.—In this case also the growth was removed by bi-mannual separation and removal with heavy forceps. Its extension was removed from the right antrum through the right lateral wall and Caldwell-Luc method. Patient made perfect recovery and is free from symptoms.

5th CASE

Dhan Singh, Male 20 years, Labourer. Admitted with the history of epistaxis, nasal obstruction, headache change in voice, swelling of the palate for 1½ years and occasional purulent discharge from the left nostril.

Local examination showed a growth in the left nostril, filling up the entire left nostril and the nasopharynx with areas of haemorrhage and slough over it. Marked bulging of the palate septum deflected to the right. Systemic examination showed nil abnormal. B.P. 117/80 mm. Hg.

Investigations.—Hb. 7 Gms. R. B. C. 3.5 millions. Total and differential blood count normal. W. R. negative. Urine normal, chest clear. X-Ray sinuses showed Fronto-Maxillary sinusitis.

Treatment.—Growth removed by Trans-palatal fenestration with primary closure of it. Patient free from any complaint.

6th CASE

Lila, Male, 25 years, Labourer. Was admitted with history of epistaxis, nasal obstruction, proptosis of right eye, bulging of the palate 10 months. Local examination showed a big tumour filling up the whole cavity of right nostril and naso-pharynx. Marked bulging of the palate Septum deflected to the left. Proptosis of the right eye. Systemically nil abnormal. B.P. 120/80 mm. Hg.

Investigations.—Hb. 12 Gms. R. B. C. 4.8 millions. Total and differential white blood cell count normal. Urine normal. W. R. negative chest clear. X-Ray sinuses clear.

Treatment.—Growth removed as in the above case. No recurrence so far.

7th CASE

Kishan Lal, Male 15 years, Student. Was admitted with complaints of nasal obstruction and epistaxis for the last 2-3

months. Had already been operated in this hospital for the same complaints 10 months earlier. The growth was removed by the trans-palatal route and had a course of deep X-Ray therapy.

Local examination a small growth present in the right nostril rather hard in consistency. Mass also felt in the right naso-pharynx. An old scar present on the palate. Systemically nil abnormal B. P. 98/70 mm. Hg.

Investigations.—Nothing specific. X-ray sinuses clear.

Treatment.—Growth was removed through the nose with heavy forceps (Lubet-Barbon) after bi-mannual separation through nose and naso-pharynx. Patient made good recovery.

DISCUSSION AND COMMENTS

Naso-pharyngeal fibroma is named by various other names as Angio-fibroma, Juvenile sarcoma, Bleeding fibroma of adolescence etc. It is a common disease in India encountered in poorer class of people although it is described as a rare disease in Western Countries. The age incidence is usually between 10 and 25 years and nearly always found in males. Usually it is single and arises from the roof or the posterior wall of the naso-pharynx, rarely it has its origin from the anterior sphenoid wall, base of the sphenoid, nasal choanae or the adjoining parts. Generally it is sessile with a broad base and invades the surrounding structures and produce the symptoms accordingly. In our series of cases almost every case showed extension of growth to ethmoidal gallery. Macroscopically the growth is pinkish in colour, firm in consistency and covered with mucus membrane. Microscopically the mass consists of dense fibrous tissue with a very few cells and richly supplied with blood vessels, a few of them being very much dilated as venous channels.

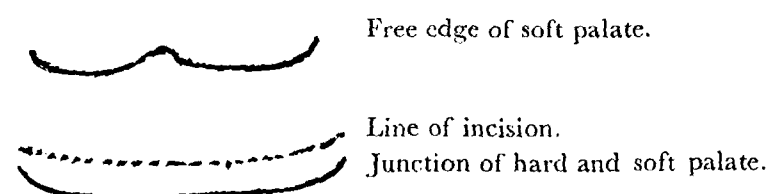
Etiology of the disease is obscure, one of the theories of Harmonal imbalance of "Hayes-Martin and Ehrlich" does not seem to hold good as none of our cases had any sexual or physical under-development.

Symptoms.—Early symptoms are those of bleeding, nasal congestion and obstruction and change of voice due to obstruction in the naso-pharynx. Later the growth may ulcerate and foetid and Muco-purulent discharge from the nose may be there. As the growth advances and invades the surrounding tissues, the external deformities and the relative symptoms like difficulty in breathing swallowing, proptosis, deafness, cranial complications and even death may occur.

Prognosis.—Early recognition and its removal completely and the growth occurring after 25 years of age bear a good prognosis.

Treatment.—It is the complete removal of the growth. The removal with electro-coagulation and cutting current at different sittings is also practiced with very good results. Our cases were operated by extirpating the growth by Wilson's Technique of Palatal Fenestration described below, and post-operative deep X-Ray therapy. The patient is put in Rose's position (as for tonsillectomy) with Davis' or Boyles mouth gag in. Endotracheal anaesthesia coupled with hypotensive method to minimize the bleeding is used. The incision given for palatal fenestration at the line just beyond the junction of hard and soft palate (this slight modification of Wilson's incision facilitates the stitching of the wound later). The growth is separated from its attachments and adhesions with the finger which is the best separator and at places helped with raspator. Then it is removed by pulling or twisting with heavy forceps like 'Lubet Barbon'. The bleeding is always brisk and profuse (especially if growth is removed piecemeal or incomplete). Haemorrhage can ordinarily be controlled by hot packs and blood and plasma transfusions, but one should be prepared for ligation of the External Carotid. Fortunately we did not require the ligation in our series of cases. Then the palate wound is stitched in 2 layers with pillar suture needle using 00 plain cat-gut. Posterior and anterior nasal packings are left in situ for 24 hours. The cases with antral extension are best done by palatal fenestration and Caldwell-Luc or Maures lateral Rhinotomy.

Simply irradiation and use of sclerosing fluids is also practised but the results don't seem to hold good promise.



My thanks are due to Col. Mehra, the Medical Superintendent, Irwin Hospital, for allowing me to use the hospital records.

Peroral Endoscopy

BY

Dr. C. SATYANARAYANA, (Madras).

Peroral Endoscopy may be defined as direct visualisation of the interior of the air and food passages by the use of specially illuminated hollow tubular instruments. These are introduced through the mouth and serve as specula to draw aside structures that obstruct the view or bring them into the line of vision. Except in the case of more recent gastroscopes and flexible bronchoscopes, the endoscopic tubes are rigid and of necessity straight. The technique of peroral endoscopy developed in the early part of the last century. Improvements were made during the last half a century. In ancient Hindu medicine, mention was made of a tubular instrument, called Kantha Salyavalokana Nadi, about ten inches long and five inches in circumference to remove foreign bodies from the throat.

History.—The possibility of examining oesophagus by a tubular speculum was conceived from that of a sword swallower. The sword swallower could place the head and neck in such a position that the food passages became approximately a straight line. Then there is no difficulty in passing a sword or tube illuminated with an incandescent lamp into the esophagus. This was first thought of by Kussmal, a German surgeon with the help of his Indian attendant who was a habitual sword swallower. Kussmal belonged to Freiburg. In 1868, he used the urethroscope of Desormeaux and he was first to perform oesophagoscopy. Of course, his subject was the Indian sword swallower and in his demonstrations he used the sword swallowing position. His pupil Muller showed that a rigid tube 13 mms. in diameter could be introduced safely into the normal oesophagus. Bezzini of Weimar in 1806 devised a primitive endoscope. But all that he used was that it is a speculum that is used to examine urethra. In 1853, Desormeaux invented an instrument designed as "Urethroscope".

Kussmal elongated Desormeaux's urethroscope to a length of 43 c.ms. He was able to see a carcinoma in the thoracic oesophagus and demonstrated the possibility of introducing rigid tubes into the lowest part of the oesophagus by using the sword swallowing position.

In 1855, Manuel Garcia, the celebrated master of singing, startled the scientific and musical world with the results of his experimental research and observations on the human larynx during phonation. The introduction by Garcia of the laryngoscope, a small round mirror by means of which he first succeeded in seeing his own larynx and watching its movements in respiration, in formation of vowels and in singing, inaugurated a new epoch in the study and development of vocal culture on the one hand and the possibility of bronchology on the other. With the advent of the laryngoscope its introduction by Garcia and demonstration by Czermak and Turck, we record the first actual scientific observations of the vibrating vocal cords and the mechanism of the interior of the larynx. Laryngologists were content to employ the laryngeal mirror for indirect examination of the larynx. In 1895 Kirstein of Berlin made direct inspection of the larynx with a flat spatula extending the head and depressing the tongue and the epiglottis. Another notable figure of Freiburg, Killian, who has been called the 'Father of Bronchoscopy', admired the work of Kirstein and adopted Kirstein's oesophagoscope for the direct examination of the trachea and showed that it could be extended to the bronchi. He designed efficient proximal lighting and also introduced the dorsal position for the patient. He was said to have removed a foreign body, a bone, from a bronchus. It was at the same time that Von Hacker (1902) is said to have been the first to introduce a rigid examination tube into the trachea. The oesophagoscopic and bronchoscopic tubes with proximal lighting which Killian designed still remain a standard pattern. His method of suspension laryngoscopy introduced in 1911 and hailed as a great advance in technique because it allowed both hands to be free, has been elaborated by Clyde, Lynch and Lejeune of New Orleans. Killian's chief assistant at Freiburg, Bruning of Jena, made some notable advances in the armamentarium and teaching of proximal lighting endoscopy in the beginning. In the later years Haslinger of Vienna also contributed to this teaching. Killian demonstrated his endoscopic methods at the British Medical Association meeting in 1902, thus introduced bronchoscopy and oesophagoscopy into Britain where Logan Turner of Edinburgh, E. B. Baggot of London and D. R. Patterson of Cardiff were pioneers. An earlier pioneer who should not be forgotten was John Avery (Surgeon to Charing Cross Hospital 1843-55) of whom it was recorded by Irwin Moore in the

Lancet in an obituary note in 1855 as "by means of his lamp tubes and reflectors he was able to examine the ear, urethra, bladder, oesophagus and larynx as probably no surgeon before him has ever examined them".

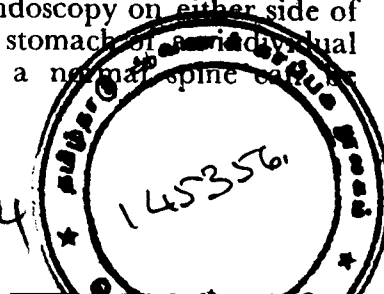
Von Miculicz in 1881 designed an oesophagoscope consisting of a tube into which he passed an optical apparatus with proximal illumination. Kirstein and Killian applied it to the larynx. From 1896 onwards, bronchoscopy and oesophagoscopy passed through the experimental stages and became an accepted procedure in surgical practice. It was Von Hecker who first used a rigid tube into the trachea but it was Killian who developed it. Einhorn in 1902 added an auxiliary tube in the wall of the main tube and in this he inserted a light carrier to serve as a conveying wire to a small electrical lamp which it carried at the distal end of the tube.

We should not forget Horace Green of New York, 1828, who conceived the idea of medicating the cavity of the larynx by catheterisation and thus discovered the law of tolerance of the larynx to the presence of a foreign body. In 1885 Joseph O'Dwyer introduced his intubation tubes for relief of stenosis of larynx. Morrel McKenzie in 1880 designed a skeleton oesophageal tube but used it likewise for direct examination with a laryngeal mirror. It is doubtful whether this delicate instrument was ever inserted beyond the lower sphincter orifice of the deep pharynx.

Gottstein of Breslau in 1891 fitted an extra tube to Killian's bronchoscope tube for suction and employed cocaine for local anaesthesia before inserting it.

In America Einhorn of New York published the first article on Oesophagoscopy in 1897 and designed the distal lighting of an oesophagoscope in 1902 followed by Ingal's of Chicago in 1904. Chevalier Jackson of Philadelphia, who long before had visited Morrel McKenzie's clinic in London and had seen him use his skeletal oesophageal tube, in 1904 made the distal lighting proper, designed a bronchoscope with a suction tube as well as a light carrier and attached a useful right-angled handle to the endoscopic tubes. Chevalier Jackson developed a perfect bronchoscope and thus developed a speciality within a speciality. He developed the largest clinic and the School of Endoscopy on either side of the Atlantic. He pointed out that the stomach of an individual which has a normal oesophagus and a normal spine of the

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explored with an open tube gastroscope and an adult size oesophagoscope being 53 c.ms. long will reach the stomach of the average individual but longer gastroscopes are used when necessary. Wolf and Schindler made flexible the gastroscope which is easier to introduce than the rigid tube and gives wide field of vision in an air inflated stomach. Gastroscoy being gradually more and more employed for diagnostic purposes as it can often give valuable information about the condition of the stomach and as a useful adjunct to radiography. Benedict, Montier and others have found it particularly useful in the study of gastritis.

The distal illumination according to Jackson has become more and more popular in the course of the time and also Broyles, Haslinger Lemoine, Negus and Soulas followed suit very soon.

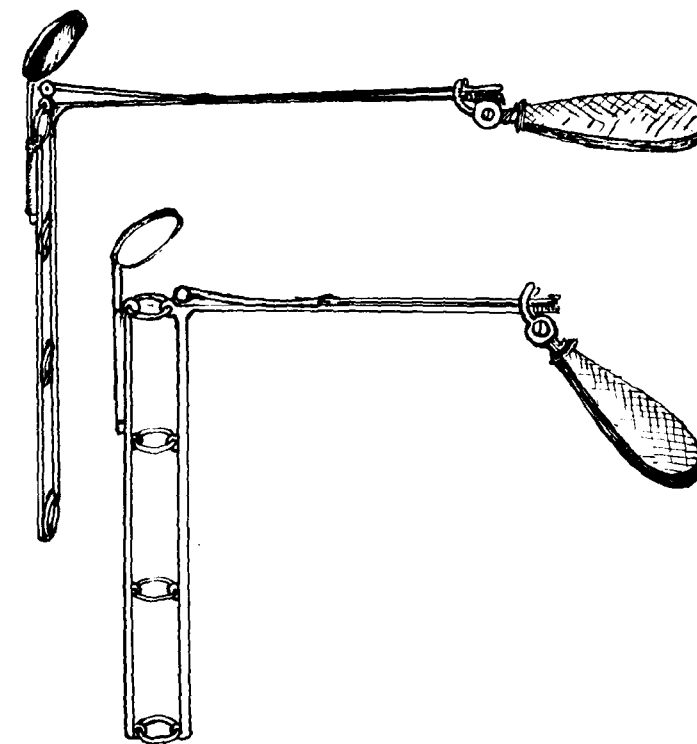
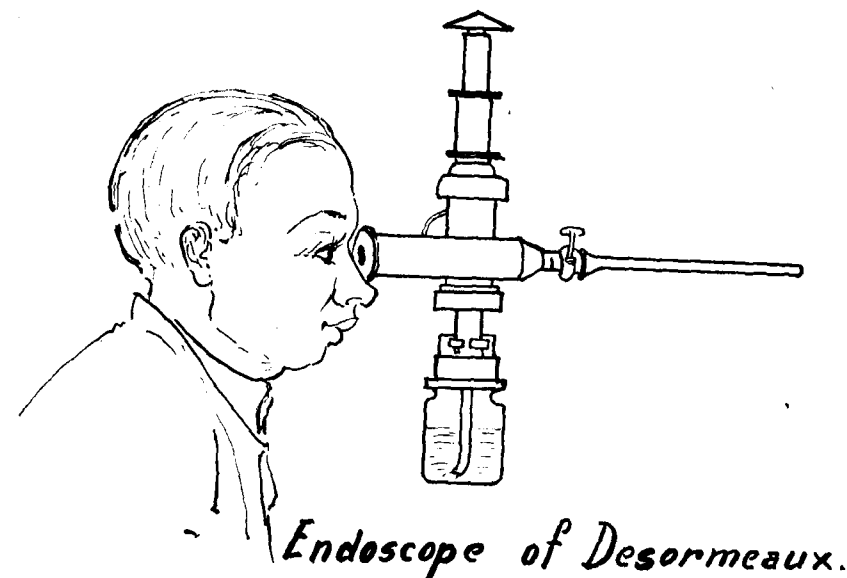
As it is not practicable to view all segment—bronchi, Bronchoscopic Telescopes were introduced (ACMI - U. S. A. and Storz W. Germany) etc. With help of these telescopes it is possible to inspect a large portion of the bronchial tree. Accordingly telescopes can be connected with biopsy—forceps and thus offer safer exploration in biopsy.

By means of well designed flexible biopsy forceps and suitable telescopes, biopsy can be performed even from segment—bronchi of the upper lobe and also in the apical branch of the lower lobe, and foreign bodies can be removed accordingly.

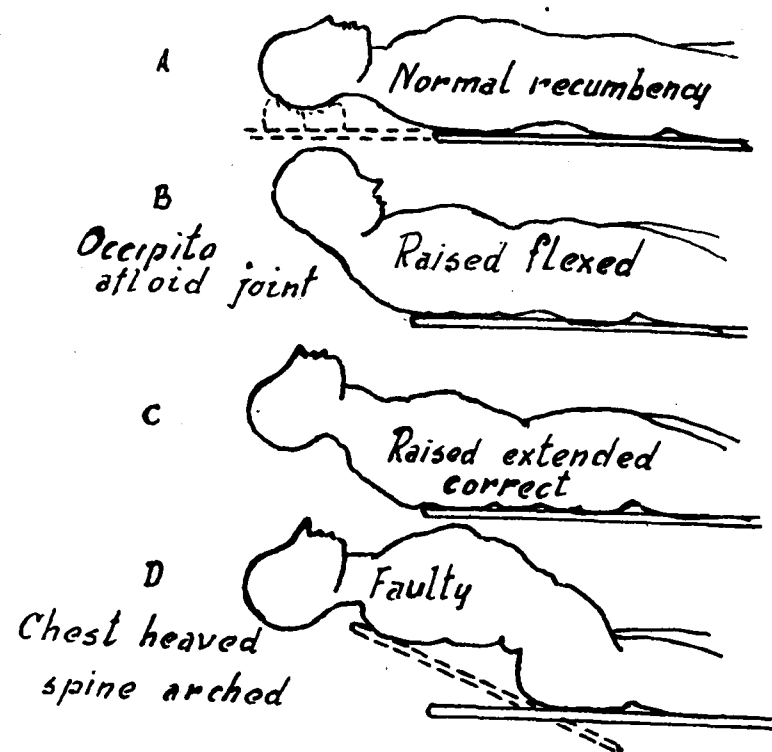
Peroral Endoscopy was developed primarily by the Otolaryngologists for the removal of the foreign body ; but now the scope and use of endoscope is far beyond the removal of foreign body. It is useful not only to remove foreign bodies but also for diagnostic purposes and also treatment. The removal of foreign bodies by the endoscope method has become so generally appreciated and now available in all first class hospitals.

Anaesthesia.—It is convenient to divide patients into age groups, under 2 years, children over 2 years of age and adults. At least up to 2 years of age direct laryngoscopy can be done without anaesthesia. In some clinics more extensive procedures, in particular oesophagoscopy, are done without anaesthesia in young children. General anaesthesia is preferable for bronchoscopy and oesophagoscopy in children of all ages. A satisfactory method is to give rectal paraldehyde in a dose of 1 drachm

PERORAL ENDOSCOPY



Morell Mackenzie's Skeleton Tube Oesophagoscope.



Position of the patient during Bronchoscopy—Normal and Faulty.

per stone body weight, and supplement with light chloroform anaesthesia on an open mask sufficient to produce relaxation. Once the endoscope is introduced no further anaesthesia is required. In older children gas oxygen and trilene is satisfactory. Ether always carries a risk of explosion.

Direct laryngoscopy and bronchoscopy in adults is usually done under local surface anaesthesia. (Oesophagoscopy as a diagnostic procedure can be done by this method in many cases, provided a small lumen tube such as the Jackson 10 mm. oesophagoscope is used. Oesophagoscopy is nevertheless an ordeal under local anaesthesia. General anaesthesia is preferable and always indicated in prolonged examination or the removal of foreign bodies. Deep relaxation is required for oesophagoscopy and many anaesthetists prefer to pass an intra-tracheal tube. The intratracheal tube is no disadvantage to the surgeon. Pentothal and curare is being used to an increasing extent in all forms of endoscopy. For removal of a tumour or biopsy in the anterior commissure of the larynx or for bronchoscopy in a nervous patient it is ideal.

Preparation for Surface Anaesthesia.—Omnopon gr. 1/3 or sodium amytal gr. 3, or similar drug is given one hour before. Nupercaine 2 per cent solution or decicain 2 per cent solution is used for surface anaesthesia. The risk of cocaine sensitivity can be reduced by previous skin test. Nevertheless the quantity of cocaine solution must be carefully controlled. The laryngeal syringe is charged with 15 minims of 2 per cent solution and 1 drachm is measured for the painting of the pharynx. This allows a margin for the preliminary spraying of the oral cavity and subsequent spraying of the carina and other sensitive parts of the bronchial tree. Decicain 2 per cent solution has the advantage that it can be used more freely but its action is not so prolonged as that of nupercaine. Brown and Howrie (1948) consider that percaine B. P. 2 per cent solution gives a surface anaesthesia equal to or better than cocaine 10 per cent solution, and that idiosyncrasy does not occur.

The instruction of the patient in the procedure that is to be done, explaining the importance of relaxation and showing that no obstruction to the air going in and out of his lungs can occur, the "sermon" as Chevalier Jackson calls it, is an essential part of the preparation. It can be conveniently done while the surface anaesthesia is being applied.

The application of surface anaesthesia begins with sucking a benzocaine lozenge (benzocaine 0.1 gm., menthol 0.0025 gm., borax 0.025), or decicain lozenge containing 1 grain of amethocaine hydrochloride, and is followed by spraying the oral cavity and pharynx. In the next stage the anaesthetic solution is applied to the pyriform fossae. The patient sits in a chair, and the laryngologist sits in front of the patient using the reflected light from a headmirror or headlight. A wool swab is soaked in the solution and then held by Jackson's forceps or Krause's forceps in the pyriform fossa, the patient being told to close his mouth over the forceps. This is repeated in the opposite pyriform fossa. Each fossa is painted a second time. The swab-holding forceps are then placed over the back of the tongue in the midline to anaesthetise the epiglottis. Finally the patient holds his tongue with a tongue cloth, the surgeon holds the mirror with his left hand and the laryngeal syringe with his right. The beak of the syringe is passed over the epiglottis and 15 minims of the anaesthetic solution are dropped on to and between the vocal cords. In thoracic clinics the anaesthetic solution is injected through the crico-thyroid membrane instead of by a laryngeal syringe. Every endoscopist should read "Personal Experiences of Bronchoscopy" (Organe, 1946).

BRONCHOSCOPY.

Before considering bronchoscopy, it is better to have an idea of the anatomy of the bronchial tree and the lungs. The lungs should be sub-divided according to bronchial distribution rather than by fissures. The fissures are much less constant both as to the absence of the ones usually present and as to the presence of anomalous ones. The gross cadaveric anatomy has been described accurately and thoroughly in anatomical text books, but for bronchoscopic regulations greater localizing details are necessary. Jackson and Huber use a nomenclature which has been accepted in America. A knowledge of the segmental anatomy and nomenclature is essential for the interpretation of x-ray films of every patient with bronchial or pulmonary diseases or injury. Brock, et al, argued that from a basic anatomical standpoint each lung should be considered as consisting of 4 lobes and each lobe divided into segments. It was Nelson who suggested that each lung is actually divided by the arrangement of the bronchial and vascular tree into 4 lobes, (1) upper, (2) middle, (3) lower, and (4) dorsal; each of the 4 lobes possess an independent bronchus and blood supply and is separated from adjacent lobes if not by fissure at least by a vascular plane of cleavage across which no bronchial or vascular connections are

encountered until the hilum is approached. Churchill and Belsey insist that greater precision in diagnosis and operative technic now indicate that bronchial pulmonary segments should replace the lobes as the surgical unit of the lung. As already stated, Jackson and Huber have suggested that the lungs should be anatomically sub-divided according to bronchial distribution rather than by fissures. The position of each segment in the lobe is taken as the basis for the names chosen. The terms apical and basal are firmly established. Lateral has been used instead of axillary, since the lateral applies properly to the region of the armpit. The segmental bronchi are designed for the names of the segment which are supply path. This correlation of bronchial and pulmonary anatomy is important in bronchoscopy for the location of a bronchial orifice and indicate clearly the location, relation and relative size of the corresponding broncho pulmonary segment. Soulas has tried to standardize the nomenclature of the bronchi and suggest 3 bronchoscopy planes, superior, middle and inferior and then in each plane sub-divides the lung into zones; the superior bronchial plane comprises of 3 zones apical superior anterior and superior posterior. The middle plane comprises 2 zones, medial anterior, medial posterior; and the inferior plane comprises 4 zones in the right lung basal anterior, basal lateral, basal posterior and basal internal and 3 zones in the left lung, basal anterior, basal lateral and basal posterior.

The trachea bifurcates at the upper border of the fifth thoracic vertebra to form the 2 primary bronchia. The primary bronchi on either side extends downward into the lower lobe. On the right it descends obliquely downwards and laterally towards the hilum at an angle of about 25° with the medial plane of the body. On the left, it descends some what horizontally and froms an angle of about 45°. The primary bronchia give rise to secondary or lobar bronchia. The secondary branch divide into tertiary branches which with their corresponding parenchyme form the broncho-pulmonary segments.

Indications for Bronchoscopy.—Peroral Endoscopy was developed primarily by the otolaryngologists for the removal of the foreign body; but now the scope and use of endoscope is far beyond the removal of foreign body. It is useful not only to remove foreign bodies but also for diagnostic purposes and treatment. The removal of foreign bodies by the endoscopic method has become so generally appreciated and now available in all first class hospitals.

Removal of foreign bodies and after treatment of complications, diagnosis and treatment of simple or malignant new growth, diagnosis and treatment of suppuration of lung by diseases or bronchiectasis; examination in cases of haemoptysis in treatment of asthma and diphtheria for investigation of physiology of the lungs by Bronchspirometry, also direct inspection of pathological changes in the living bronchi for removal of specimens the neoplastic and other moribund tissues and uncontaminated secretions for laboratory study, to improve the drainage by dilatation of stricture or removal of obstructive tissues such as granulomata or benign tumours; an accurate localisation of disease by serial examination of segmental bronchial orifices and to directly apply chemotherapeutic agents of accurately localised focus of disease are some of the indications.

Contra-Indications.—Contraindications to bronchoscopy for disease are not absolute, but in the following conditions bronchoscopy may be inadvisable: (a) A moribund condition of the patient due to causes other than obstructive asphyxia; (b) Serious cardiac or arterial disease; (c) extreme and irreducible hypertension; (d) diffuse, rapidly extending, necrosing pneumonitis; (e) imminent rupture into the pleura. Pulmonary tuberculosis is no contraindication to a diagnostic bronchoscopy if conditions require it; and in some cases, such as tuberculosis of the bronchial wall, it may be the chief means of diagnosis and treatment.

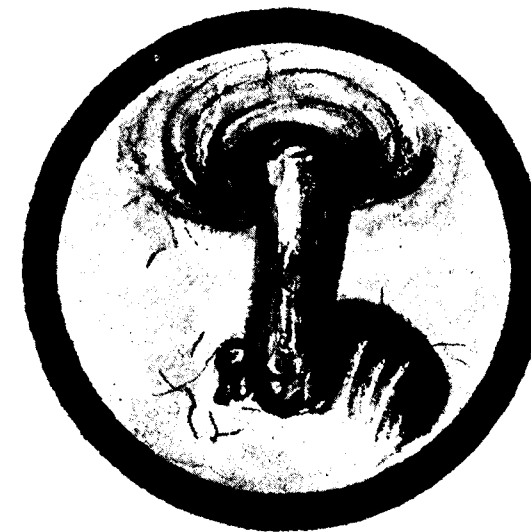
BRONCHOSCOPIC APPEARANCES OF VARIOUS LUNG DISEASES.

Bronchogenic Carcinoma.—Until some 20 years ago, the diagnosis of bronchogenic carcinoma was usually made by the pathologists in the autopsy room. This procedure was slowly replaced by the bronchoscopic biopsy with a positive diagnosis in the living patient. With the bronchoscopic biopsy, the diagnosis is certain. This affords the thoracic surgeon to operate. It is possible to diagnose bronchogenic carcinoma at the main bronchus, but to facilitate diagnosis in smaller bronchi telescopic lens system employed as a bronchoscopic obturator for inspection of lesions around the corner in the bronchi of an upper lobe was added, to the armamentarium.

In a case of bronchogenic carcinoma, the Bronchologist should observe if there is narrowing of the bronchus, narrowing de-formation, fixation or rigidity of a bronchus due to neoplastic infiltration. In the absence of biopsy material, these findings are very important for diagnosis. Biopsy is contra-indicated if there is



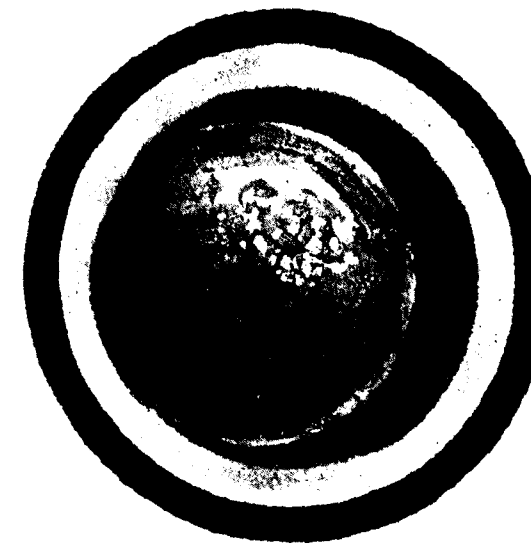
Engorgement of mucous membrane of the orifices.



Pus in an inflamed bronchus.



Granulations and pus covering the ulcerated area



Gumma of the trachea.



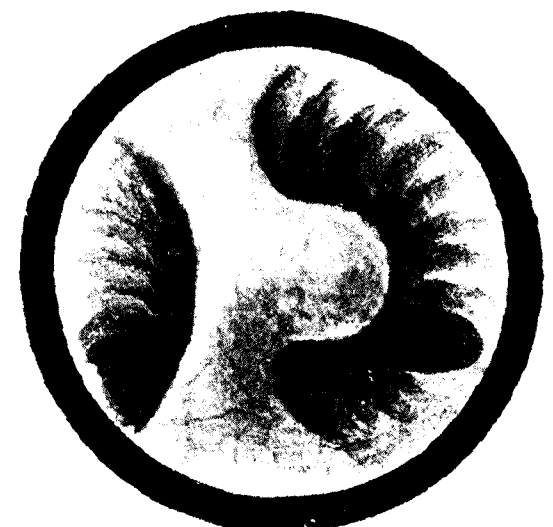
Early Tuberculosis of the Bronchial wall.



Tuberculous abscess of the bronchus.



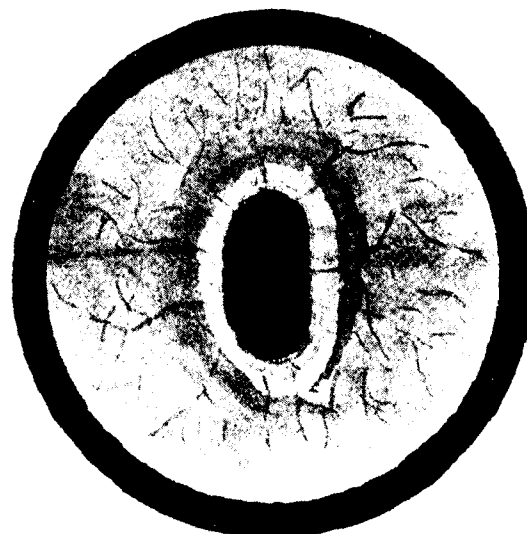
Adeno-Carcinoma from the bronchus.



Bronchogenic-Carcinoma.



Tuberculoma in the trachea.



Post Tuberculous cicatricial stenosis of the trachea.



A lobulated tumour partially blocking the bronchus.



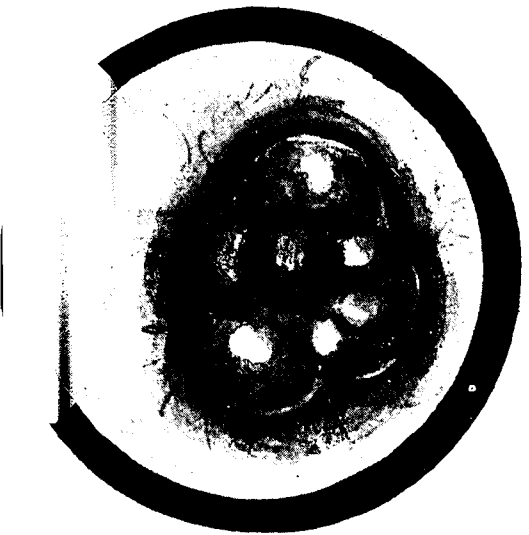
Fibro papilloma with pedicle attached to the bronchial-wall



Tumour like formation of inflammatory tissues
in the bronchus



Adeno-Carcinoma arising from an
ulcerated bed



Tumour obstructing the bronchus.



Squamous cell carcinoma.

no break in the mucosal surface. De-formity of the bronchial wall by the carcinoma is due to extra bronchial infiltration. It is dangerous to cut through bronchial wall to secure adequate specimen.

Recently cytologic studies of bronchial secretions have shown that cancer cells are present in the bronchi. In cases of bronchogenic carcinoma aspiration of secretions may be secured from the site of the suspected carcinoma and with special staining methods, the cells may be recognised as being neoplastic in character. Attempts have been made to treat bronchogenic carcinoma by endo-bronchial implantation of radon or by application of radium element. These methods had little success.

Benign Tumours.—Benign bronchial tumours are not so common while bronchogenic carcinoma is ten times greater than that of all the benign bronchial tumours that occur in the bronchi. Adenoma of the bronchus is the most common form of relatively benign growth and most often observed in young adults. Adenoma often occurs as a intra bronchial or extra bronchial tumour. Adenoma can undergo cancerous changes also. Fibroma, lipoma, chondroma, osteoma have been described. Adenoma presents frequently signs of bronchial obstruction and haemoptysis. Bronchoscopic findings usually are characteristic. The tumour rarely is ulcerated and appears as a rounded, reddish smooth mass which may produce bronchial obstruction as it grows. In the long run complete bronchial obstruction may be produced. Bronchiectasis may co-exist. Haemoptysis, as already stated, may be frequently observed and may be profuse. Attempts of biopsy may give rise to severe haemorrhage. This is not so in the case of carcinoma or other bronchial tumours. If one attempts to take such a biopsy, the Bronchologist must be prepared to block the bronchus for a brief time. The best treatment for adenoma after testing by a biopsy is electrocoagulation of the endobronchial portion of the growth.

Mediastinal and Metastatic neoplasms.—These tumours do not originate primarily in a bronchus. Hence not much of a positive information can be obtained by bronchoscopy. In the case mediastinal tumours whether primary or metastatic, bronchial or tracheal compression will ultimately result if the tumour is sufficiently big and is in close proximity to the air way. Bronchoscopically this may not give much information for the correct diagnosis and even may not cause any difficulty in breathing even if the trachea is sufficiently compressed. Information of pressure on the trachea or carina is important from the point of view of anaesthesia.

Usually metastatic tumours do not intrude into the bronchus but a number of instances have been reported in which metastasis from carcinoma of the intestinal tract, Hodgkin's disease and hyper-nephroma which had intruded into a bronchus.

Pulmonary Abscess.—In olden days before the Thoracic Surgery had made progress in the successful treatment of pulmonary abscess, bronchoscopy and pulmonary drainage by aspiration was the method of choice in the treatment of pulmonary abscess. It is a sound principle that the abscess would undergo resolution provided adequate drainage of pus could be established and maintained. In acute pulmonary abscesses, one can obtain satisfactory results if drainage can be improved by bronchoscopic aspiration and endobronchial medication. It is believed however that if more than 2 or 3 aspirations do not bring the temperature to normal and definite improvement is not shown by x-ray examination, bronchoscopic treatment should be discontinued. In chronic abscess and in cases where new growth complicated by abscess, the diagnostic bronchoscopy is indicated.

Bronchiectasis—Bronchoscopy in bronchiectasis is one of the most valuable procedures not only as a diagnostic aid, but also as a paliative measure preparatory to surgical treatment. In the case of obstructive bronchiectasis, diagnostic bronchoscopy is very essential before any surgical treatment is undertaken. Since there may be a foreign body, stricture of the bronchus or benign neoplasm all of which might seriously complicate the surgical result. Unilateral cases of bronchiectasis may be treated as surgical cases as no cure of bronchiectasis by bronchoscopy alone can be obtained.

Hence bronchoscopic aspiration has a definite place in preoperative preparation of several patients with bronchiectasis. If bronchoscopic aspiration twice a week for three weeks preliminary to surgical treatment is carried out, the risk in surgical treatment will be considerably less. Bronchoscopy as a pre-operative procedure helps to remove secretions from larger bronchi. In the case of bronchiectasis which are not suitable for surgical treatment, bronchoscopic aspiration is of higher value. Sulphonamides in micro crystalline form and also Penicillin instillation is of highest value.

Bronchial Asthma.—Bronchoscopy is of value in a bronchial asthmatic case for the investigation of tracheo-bronchial tree to rule out certain conditions that simulate asthma and to remove

secretions from the air passages. Patients with foreign bodies in the oesophagus have manifested allergic symptoms. Studies in the fatal cases of status asthmaticus have shown that one of the most common and important causes of death is the blocking of the larger air passages by thick tenacious secretions. Failure by medical treatment in cases of marked dysnea due to accumulated secretions necessitates mechanical removal by bronchoscopic aspiration. Results are gratifying even in moribund patients.

Post-operative complications.—Bronchoscopic investigations of post-operative complications which exhibit atypical pneumonia are due to blocking of bronchi by thick tenacious secretion. Bronchoscopic aspiration of the secretion has reduced most serious complication and sequele of the Thoracic Operation to a minimum.

Tuberculosis.—Tracheo-broncho tuberculosis can only be diagnosed and treated by bronchoscopy. Hence bronchoscopy is of utmost importance in tracheo-broncho tuberculosis. Sometimes in tuberculous patients certain complications following the surgical operation of tuberculosis are the result of involvement of the larger bronchi. Either by infiltrative ulcero-granulomatous or cicatricial lesions. It is in these types of cases that bronchoscopy plays a definite and important part in diagnosis as well as in treatment. By bronchoscopy the presence of infiltrative and ulcero-granulomatous lesions can be easily decided and therefore biopsy is avoided, unless there is considerable evidence of carcinoma. It is also very important to discover obstructive lesions in a bronchus which causes failure in collapse therapy. In the case of tracheo bronchial tuberculosis, it is recommended topical application of silver nitrate 5 to 30% solution. Removal also is advised if pedunculated granulomatous masses obstruct. Tuberculous cicatrization and section cicatrization stenosis of the bronchi are resistant to the bronchoscopic dilatation. In these states dilatation by bouginage gives but temporary relief and aspiration of the secretions is of great help. In the case of endotracheal tuberculosis, the interval between each bronchoscopy should be at least two weeks.

OESOPHAGOSCOPY.

By keeping the patient's upper food passages in a sword swallowing position, a lighted tubular speculum can be introduced into the oesophagus which may be called oesophagoscopy. This can be used both for diagnosis and treatment just as in the case of bronchoscopy. Oesophagoscopy in trained hands is a safe

procedure and biopsy of the ulcerated lesion in the lumen of the oesophagus is practically without any risk. In addition ample tissue can be taken for a histo-pathological diagnosis. In the stenosing lesions bouginage and dilatation can be done oesophagoscopically.

REFERENCES

- | | | |
|-------------------------------------|-----|---|
| Broc, R. C. | ... | The Anatomy of the Bronchial Tree. |
| Clerf, L. H. | ... | Bronchoscopy in Bronchopulmonary Disease.
Prevention of Bronchiectasis.
Progress in Bronchology.
Peroral Endoscopy in Thoracic Surgery.
Clinical significance of certain Respiratory symptoms.
The Clinical significance of Hoarseness and Wheezing Respiration. |
| Foster-Carter, A. F. | ... | Recent work on the Anatomy of the Bronchi with a diagrammatic Survey. |
| Fox, J. R.
Clerf, L. H. | ... | Broncholithiasis, Report of Ten Cases. |
| Herbut, P. A.
Clerf, L. H. | ... | Bronchogenic Carcinoma.
Diagnosis of Bronchogenic Carcinoma by examination of Bronchial Secretions.
Cytology of Bronchial Secretions. |
| Jackson, C. | ... | Broncho-Esophagology, Postulated semasiologic observations.
Gastroscopy as an aid in diagnosis. |
| Jackson & Jackson | ... | Bronchooesophagology. |
| Jackson, C.
Jackson, C. L. | ... | Bronchoscopic observations on Post-operative Pulmonary Complications. |
| Jackson, C. L.
Huber, J. F. | ... | Correlated Applied Anatomy of the Bronchial Tree and Lungs with a system of Nomenclature. |
| Jackson, C. L.
McReynolds, G. S. | ... | Anaesthesia for Peroral Endoscopy. |
| Kennethwaker | ... | The Story of Medicine. |
| Norris, C. M. | ... | Bronchospirography, Apparatus and Technique. |
| Long, J.
Oppenheimer, M. J. | ... | |
| Scott Stevenson
Douglas Guthrie | ... | A History of Oto-Laryngology. |
| Suck Thomas | ... | Personal communication. |

Rhinolith

BY

T. NANDAGOPAL, M.B., M.S., D.L.O., (Madras).

Rhinolith as the very name indicates is lithiasis or stone formation in the nose. Mathias de Gardi (1502) wrote about Rhinolith though he never saw one. However Bertholin in 1564 recorded a case from personal study. It is not as common as one encounters the other diseases of the nose. In the Ear, Nose and Throat department of the Government Stanley Hospital, Madras, out of about 30,000 new cases seen in 1955 only five were recorded.

Foreign bodies and infection and perhaps Vitamin A deficiency are responsible for nasal calculus. Of these perhaps the foreign body is the most exciting factor. It has been found that the foreign bodies find their way into the nose during the first five years of life, and it is said it takes about two to four years before encrustation takes place. Occasionally as a result of vomiting or sneezing, a small particle of food substance may get lodged into the nose by way of posterior nares. This produces mechanical obstruction with consequent suppuration. Air currents in the nose concentrate the pus and remove from solution the salts, especially those of calcium and bring about precipitation on the nucleus of foreign body.

Nucleus.—It is fascinating to note the type of nuclei met with. Polisan found an Indian nut in the rhinolith. Snyder and Feldman encountered a gauze sponge, a shoe button, a piece of twine. Cunningham Lord Manley and Polsar recorded a rhinolith with a nucleus of paper on which printing was still legible.

Type.—They are divided into two types—Endogenous (true) and Exogenous (false) types. The true type has a nucleus of dried mucus, blood, crusts, leucocytes or bacteria; the false type having as a nucleus some form of foreign body such as beads, nut shells, buttons etc.

Chemistry.—Rhinolith chiefly consists of inorganic salts of calcium, magnesium and sodium chiefly phosphates, carbonates and chlorides. They are usually reddish grey or dark brown. They may be hard or brittle, sometimes soft and friable.

Site.—Mostly unilateral in the floor of the nose, rarely bilateral. All the cases seen in this hospital were found to have rhinoliths in the left nasal fossa. In one case the rhinolith was

so big that it was even impossible to percainize the fossa. It was seen pushing the septum to the right with a central perforation but not encroaching into the right.

Sex.—Females seem to predominate. Of the five seen in this Hospital three were females and two males. As Seeligman observed, it is perhaps due to women blowing their noses less noisely and more gently than men and are consequently less liable to blow out the foreign bodies which mostly form the nucleus for lithiasis that it is commoner in women.

Age.—Rhinoliths have been observed in all ages, the earliest in a child of three and oldest in about seventy-six, though it is much common during the second and third decades of life as was the experience of the author, the exception being in a patient of 15, that too a boy.

Signs and symptoms.—Nasal obstruction of varying degrees depending on the size and shape and position, and unilateral nasal discharge often foul smelling in nature are the commonest symptoms. Not uncommonly the patient complains of epistaxis, head-ache, swelling of the nose, epiphora and conjunctivitis. These symptoms may be of short duration, though the rhinolith may be present for a long time as long as sixty years as reported in one case.

Complications are rare.—Depends on the size and site. There may be deviation, ulceration and perforation of the nasal septum. Sometimes it might involve the naso-antral wall and palate, with consequent destruction and perforation. Rhinitis—caseosa, sinusitis are common observations on the affected side with occasional middle ear involvement.

Diagnosis.—It should be diagnosed from syphilis, calcified polyp, osteoma, osteomyelitis, carcinoma.

Treatment.—Very simple. Local anaesthesia and removal of the calculi at one or two sittings depending on the size and nature, is the method of choice. If necessary antral wash is done at a later date.

Summary.—Five cases reported. The etiology and complications discussed.

Case Report No. 1.—N. S.: 25 years, Hindu - Male. C. O.: For the last five years unilateral nasal discharge headache and nasal obstruction. Feeling of some hard mass moving within the left nostril. O. E.: Nose large yellowish brown mass free movable and fairly hard in consistency. Nasopharynx - granular in nature.

Treatment.—Local anaesthesia and removal in pieces.

Case Report No. 2.—D. O.: 15 years - Hindu - Female. C. O.: Left sided nasal discharge, foul smelling in nature for the past 3 years. Sense of obstruction. O. E.: Nose: yellow mass just behind the anterior end of left inferior turbinate - Nasopharynx: Normal.

Treatment.—Local anaesthesia and removal.

Case Report No. 3.—A.: 20 years - Christian - Male. C. O.: Nasal obstruction, foul smelling purulent discharge. O. E.: Nose: Large brownish mass - irregular in surface and hard to touch and almost occluding the nasal cavity Nasopharynx - Normal. X-ray: Left antrum lazy and presence of calculi observed.

Treatment.—Local anaesthesia and removal by piece meal. After about a fortnight, left antral wash and penicillin instillation. Six months later SMR done.

Case Report No. 4.—H. D.: 53 years - Hindu, Female. C. O.: Pain. Total obstruction left nostril, foul smelling discharge and Epistaxis on and off for about seven years. Since six months, headache and epiphora. Patient was attending Ophthalmic Department for conjunctivitis (left). O. E.: Nose: Brownish mass completely obstructing the left nostril; hard and irregular to touch and septal deviation to right. Examination of right nostril revealed a perforation in the septum. X-ray: Size of rhinolith and antral haziness found. Naso-pharynx - Congested and granular.

Treatment.—Local anaesthesia and removal in two stages because of bleeding. After three weeks antral wash done twice. Patient was not willing for plastic repair of the septal perforation.

Case Report No. 5.—R. M.: 35 years - Hindu - Female. C. O.: Nasal obstruction and foetor epistaxis on and off since six months. O. E.: Nose: Brownish mass blocking the lower half of left nostril and extending towards the inferior meatus. Yellowish discharge. Anterior deflection of septum to right. Nasopharynx - Normal.

Treatment.—Local anaesthesia and removal at one stage.

My heart felt thanks to Dr. C. Satyanarayana, M.B., M.S., D.L.O., F.I.C.S., F.C.C.P., Prof. E. N. T. Diseases for guidance and to the Dean, Govt. Stanley Hospital, Madras for permission to utilise the Hospital records.

REFERENCE.

1. A. M. A. Archives of Otolaryngology, Vol. 55 - 1952.
2. Radiology, Vol. 58 - 1952.
3. Journal of Laryngology and Otology, Vol. 66 - 1952.
4. Ballinger - Diseases of Nose, Throat and Ear.
5. Boyd - Text book of Pathology.

— THOMAS SUCK —

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Association Notes

SIXTH INTERNATIONAL CONGRESS OF OTOLARYNGOLOGY

The International Committee of the Fifth Congress of Otolaryngology has invited the National Societies of Otolaryngology and Bronchoesophagology of the United States of America to organize the Sixth International Congress.

The Organizing Committee at the direction of the national societies cordially invites you to attend the Sixth International Congress of Otolaryngology which will be held in Washington, D. C., from Sunday, May 5, through Friday, May 10, 1957.

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GENERAL INFORMATION

This first circular is sent to all those who may wish to attend this Congress. Additional information concerning details of registrations, accommodations, requests for positions on the program, entertainments, excursions, programs, etc., will be sent to those returning the enclosed post card.

No further circulars will be sent to those who do not return the enclosed post card.

Subscriptions.—The subscription for Members will be \$ 25.00 (U.S.A.) This will include the privilege of attendance at all official meetings of the Congress except the banquet for which an additional charge will be made. Persons accompanying Members may be registered as Associates at a fee of \$ 1000.

Accommodation and Travel.—The American Express Company is the official travel agent for the Congress. Their offices throughout the World are available for travel arrangements to the Congress and for post-Congress tours. Forms for hotel accommodations will be sent to those who return the enclosed post card. Accommodations can be reserved only by those who apply for membership.

THE SCIENTIFIC PROGRAM

The selected subjects for the Plenary (Combined) Sessions will be :

1. Chronic Suppuration of the Temporal Bone.
2. Collagen Disorders of the Respiratory Tract.
3. Papilloma of the Larynx.

Outstanding internationally recognized authorities will open the discussion of each of these subjects.

Communications of two types are invited. (1) Contributions to the discussions of the selected subjects: Speakers limited to 5 minutes. (2) Original papers: Speakers limited to 15 minutes. These should be in one of the four official languages: English, French, German, Spanish. Members wishing to discuss a selected subject or present an original paper will so indicate on forms to be sent to those returning the enclosed post card.

Films and Exhibits.—Motion pictures will be shown continuously except during Plenary Sessions. There will also be both scientific and technical exhibits.

OTHER ACTIVITIES

An interesting program of tours, social functions and visits to points of interest in and around Washington is being arranged. Further information concerning these activities will be sent to those returning the enclosed card.

Please address all communications to the General Secretary, Paul H. Holinger, M.D., 700 No. Michigan Ave., Chicago 11, Ill., U.S.A.

TRIVANDRUM

Dear Colleague,

We shall welcome you at Trivandrum for the VIII Annual Conference. Please give me the following information by 15th November if possible, but not later than 25th November.

1. The number attending and how many adults, ladies or children.
2. Vegetarian or not.
3. Free accommodation is being arranged at the Medical College Hostel, but if you wish to reside in a hotel, then Mascot Hotel charges Rs. 17-8-0 per head per day and is three miles away from the college.
4. Date of your arrival, whether by plane, train or otherwise.
5. Please inform early when you want the return passage booked, and send me the fare.
6. Air concession is 1½ fares for round trip, for which please communicate with Dr. C. A. Amesur, 93, Queens Road, Fort, Bombay.

7. No rail concession is available.

8. If you are reading any short paper of 15 minutes duration, please give me the heading now and a copy of the manuscript by registered post by the 29th November, 1955.

Thanking you for an early reply,

"Sankaramangalam",
Palakulangera,
Trivandrum-1.
25th September, 1955.

Yours very sincerely,

A. R. THAMPI,

Honorary Secretary.

LIST OF SCIENTIFIC PAPERS (Trivandrum Session)

30th December 1955.

PAPER	By
1. Recurrent Laryngeal Paralysis in Heart Diseases ...	Dr. T. K. Raman
2. Problems of Deflected (Nasal Septum). do	Dr. C. Narayana & Maj. K. K. Ghosh
3. Experiences in Fenestration ...	Dr. R. A. F. Cooper
4. Retropharyngeal Abscess ...	Dr. K. L. Pathak
5. National Advisory Council for the Education of the Handicapped ...	Dr. C. A. Amesur
6. VIII Nerve in Fluorosis ...	Dr. R. V. Rao

31st December 1955.

PAPER	By
1. Symposium on Allergy : (i) Nose ...	Dr. Tulsi Das & Dr. Vithal
(ii) Naso-pharynx ...	Dr. M. M. Nath
(iii) Ear ...	Dr. V. Subramaniam
(iv) Larynx ...	Dr. R. V. Rao
2. Resection of Chorda Tympani Nerve for Tinnitus ...	Dr. R. A. F. Cooper
3. Further trials of Cortisone in Sub-mucous Fibrosis ...	Dr. R. V. Rao & J. V. DeSa

	PAPER	By
4.	Granulations in External Auditory meatus ...	Dr. M. M. Nath
5.	(a) Etiology and Treatment of Carcinoma of the Larynx. Discussion...	Dr. S. N. Sarma
	(b) Biri and Cigarettes as a Causative factor ...	Dr. C. A. Amesur
6.	Papers by Trivandrum Doctors.	
7.		
8.	The Management of Patients suffering from Carcinoma of the paranasal Sinuses ...	Dr. A. F. Desmond
9.	Uncommon causes of Nasal obstruction.	Dr. S. Jain
10.	Medical aspects of Hearing loss and its Surgical Treatment ...	Dr. Leelavathi
11.	(i) Laryngectomy (ii) Lingual Thyroid (iii) Brain Abscess	Dr. P. N. Sinha

Accounts of the Journal of the Association of Otolaryngologists of India with the Honorary Treasurer at Madras.

Receipts and Payments for the year ending 30th September, 1955.

RECEIPTS.	Rs.	A. P.	Rs.	A. P.	PAYMENTS.	Rs.	A. P.	Rs.	A. P.
To Opening Balance—					By Printing Charges			1,961	11 3
On S. B. Account with Canara Banking Corporation Ltd., as on 1-10-1954	7,021	12 9			„ Establishment Charges			240	0 0
Cash with Clerk (Contingencies account)	19	5 3			„ Postage			119	5 3
Central Office Contribution			7,041	2 0	„ Bank Charges			9	4 0
„ Advertisement			723	0 0	„ Auditors' Honorarium			50	0 0
„ Subscription to Journal			1,976	12 0	Closing Balance—				
„ Interest from Bank			43	8 0	„ On S. B. Account with Canara Banking Corporation Ltd., as per Pass Book on 30-9-'55.	4,419	5 0		
			107	12 0	„ Securities with Lloyds Bank, Bombay	3,000	0 0		
					Cheque of India Advertising Service Bombay	85	0 0		
					Cash with Clerk (Contingencies account)	7	8 6		
Total			9,892	2 0	Total			7,511	13 6
								9,892	2 0
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MADRAS,
15th November, 1955.

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THE ASSOCIATION OF OTOLARYNGOLOGISTS OF INDIA

Receipts and Payments Account for the year ending 30th September, 1955.

RECEIPTS	Rs. A. P.	Rs. A. P.	PAYMENTS.	Rs. A. P.	Rs. A. P.
Opening balance:					
Cash in current account with Lloyds Bank Ltd.		2,929 12 3	Advance to Indian Journal of Otolaryngology		723 0 0
Investments at cost		4,877 14 6	Salaries		240 0 0
		7,807 10 9	Printing and Stationery		15 7 9
Subscriptions:			Postage and Telegrams		215 0 0
Ordinary members	2,736 0 0		Bank Charges		21 2 0
Associate members	252 0 0		Auditors Honorarium		50 0 0
Dividends:			Seventh Annual Conference Expenses		250 0 0
Imperial Bank of India	80 0 0				
Ahmedabad Electricity Co. Ltd.	65 15 8				
Surat Electricity Co. Ltd.	35 0 0	180 15 8			
Interest:					
Rs. 1,000 Debentures of Tata Locomotive and Engineering Co. Ltd.	50 0 0		Balance at close:		
Rs. 2,000 Government of India 3% Funding Loan 1966/68	30 0 0		Cash in current account with Lloyds Bank Ltd.	2,414 2 9	
			Investments at cost (as per schedule annexed) on own account.	7,108 6 6	
Less: income tax	80 0 0		On account of The Indian Journal of Otolaryngology	3,007 8 0	
	20 12 0				12,530 1
Less: paid on purchase of investments	59 4 0				
	20 11 11	38 8 1			

Indian Journal of Otolaryngology for purchase of investments (invested per contra) ... 3,000 0 0

Interest on Rs. 3,000 4% Bombay Municipal Debentures 1954/64 ... 60 0

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Total ... 14,044 11 0

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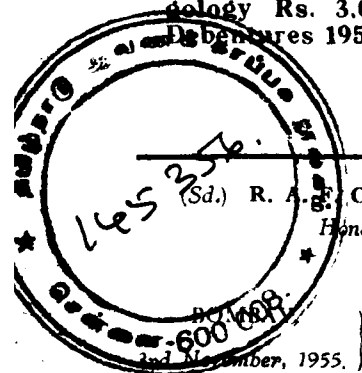
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The Association of Otolaryngologists of India

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PARTICULARS.	Rs	A	P.	Rs.	A.	P.
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				4,076	12	6
Application money on 11 Surat Electricity Co. Ltd. shares at Rs. 10/- per share ...				110	0	0
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				3,007	8	0
Total ...				10,115	14	6



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INDIAN JOURNAL OF OTOLARYNGOLOGY

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SEPTEMBER 1955

No. 3



Editor:

Prof. C. SATYANARAYANA

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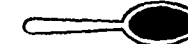
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No. 3

A Small Scale Study of Bacterial Flora of Throat with Special Reference to Pathogens in "Winter" in Bombay

BY

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AND

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INTRODUCTION

The surfaces and cavities of the body usually show considerable numbers of bacterial species, due to direct and indirect communication with the external world. The bacterial flora of the upper air passages, pharynx and throat is constituted by various species of bacteria, the significance of which is not yet fully understood. In "normal persons" some of these are commensals and others are from the pathogenic group with no specific infection at the material time, either due to the reduced virulence of the strains or the increased resistance of the individual. The position of the latter group seems to be transitory, as they do not actually colonise and are never found constantly. The non-pathogenic group of organisms—"commensals"—are constantly found usually in large numbers. It seems that they are highly adapted to grow on the mucous membranes of mouth and throat, and this can be truly designated as the "normal flora".

Saliva itself is not a good culture medium for the bacterial growth. According to some investigators, it may even show very slight inhibitory or bactericidal powers. But, these being not sufficiently powerful, saliva turns out as a basis for fluid medium with its pH—reaction suitable for different bacterial species.



B. CH & JHALA—(I. J. O.)

In the mouth, decayed tooth, food particles and organic matter of various nature provide suitable nutrition, with saliva, supplying water as a solvent. It is known that catarrhal inflammation is rarely entirely absent and this can be attributed to the bacterial lodgment upon the mucous membrane.

Staphylococci—usually of the “albus” variety and the streptococci of the viridans variety are almost always present. The haemolytic variety is less frequently present. It was also found many years ago that 30% of the people harboured pneumococci in their mouths at one time or another, in the course of the “cold months” and these were found to belong to Type IV and “higher” types. According to Dochez and Avery, this type caused only 9·8% of pneumonias, but was found with considerable frequency in “normal” mouths. Also pigment forming—“Micrococci” from non-pathogenic group are not uncommon. Considerable varieties of Gram Negative micrococci are present in mouth and throat—commonest being *Neisseria catarrhalis*, *Neisseria flava* and *Neisseria sicca*. The mouth also contains large variety of bacilli, diphtheroids being very common. Chain forming gram positive bacilli and large forms of obviously saprophytic varieties may be present in very dirty mouths. Gram negative bacilli from *Proteus*, *Aerogenes* and *Friedlander's* group are also sometimes present.

In this survey, we have made a small scale attempt to study the bacterial flora of “normal” human throats and of throats of E. N. T. patients at random at J. J. Hospital, Bombay. The present paper deals with three different groups in case of “normal” persons, of age group 18 to 40 years, viz., (I) the staff members, technicians and post-graduates in pathology school, Grant Medical College, Bombay, (II) “Blood Donors” from blood-bank at J. J. Hospital, Bombay and the last one comprising (III) Medical students of Grant Medical College, Bombay. These groups are separately shown because they form three separate social classes based on differences in resistance, exposures and incomes. Further the individuals in group III (Medical students) form one homogenous group because all students in the class sit together for at least 8 hours a day for the whole of winter term if not longer. Similarly the staff members are also in close contact with each other. As bacterial flora, in closely exposed population is likely to be similar, these three groups are separated out and shown separately in analysis of the “normals”. This paper also deals with findings obtained in E. N. T. patients selected at random from E. N. T. out-patients. These are classified as :—

- (A) Diseases of Throats,
- (B) Diseases of Nose,
- (C) Diseases of Ears,
- (D) Pre-tonsilectomy cases,
- (E) Post-tonsilectomy cases,
- (F) Diphtheria (?),
- (G) Miscellaneous cases.

It is admitted that groups D, E, F, G are closely related to group A but the categories are made to suit our future lines of study in this field. In the post-tonsilectomy group (E), only two patients co-operated with us to present themselves for examination of swab after 15 days from the operation. Few more have co-operated in the last month but the total number is not sufficient in this paper to draw any far reaching conclusions as regards the bacterial flora pre-and post tonsilectomy. Our study is now extended to various other groups and seasons and to further study of pathogens isolated. In this paper we confine our observation on “Bacterial flora” in “winter” months of Bombay. The period covered is from December, 1954 to March 1955. The mean monthly temperature records were as under :—

Month	...	Dec.	Jan.	Feb.	Mar.
Maximum	...	87·2°F	86·9°F	86·6°F	88·9°F
Minimum	...	68·3°F	68·5°F	69·4°F	74·7°F
Lowest temp. during the month...		62·6°F	63·6°F	61·7°F	68·9°F

We have excluded viruses and fungi in this study. While it is known that the chances of harbouring some of the pathogenic organisms such as streptococci from haemolytic group, pneumococci etc. are likely to be increased at one time or the other in the course of the cold months, there is no data available at all on the extent to which this occurs under local climatic conditions. Hence the study has been undertaken and is being continued.

Material and Methods.—Sterile cotton swab was rubbed over the tonsillar and pharyngeal area of the throat and this was dipped in the “little quantity” (about 1 cc.) of glucose broth without delay. Many different methods of transferring swab material to the plate have been suggested in the literature. For the present work we adopted the following method :—All swabs, dipped in little quantity of glucose broth, were incubated at 37°C for 3 hours only aerobically. Incubation of the swabs in glucose broth for three hours provided a convenient time schedule in laboratory routine whereby sufficient time was available for examining the plates inoculated during the preceding afternoon.

Moreover, quite a uniform suspension of organisms from swabs was available by 3 hours period. Mickle and Oliver¹ also found that broth suspensions (without incubation, as they did not incubate) provided an improved, though not yet an ideal cultural technique and decreased considerably the errors incurred when the swab was rubbed directly on the culture medium.

The smears were prepared from the broth suspension and stained by "Grams" and "Acid fast" staining—the latter was particularly proposed to see whether "Acid fast" organisms can be detected from throat swab material or not.

The gram-stained smear was examined and the presence of streptococci, staphylococci, diplococci, Neisseria, gram positive and negative bacilli and diphtheroids were noted. The predominating type was also noted. The blood agar plate was then inoculated only aerobically. For the preparation of blood agar, we used 8% sterile defibrinated Horse-blood. On the next day the plates were examined macro-and microscopically. All the characteristic colonies were examined by gram stain and the results noted. (β) Beta-haemolytic colonies showing gram positive cocci in diplos and short chains were subcultured in glucose broth and the strain was maintained on blood agar slants. It is proposed to type all the strains by Lancefield acid extract precipitation reaction in near future. Dextrose and saccharose in plain sugar medium and Hiss's serum water medium, were used to differentiate diphtheroids and streptococci, when the identity was doubtful on morphologic evidence.

Results and Tables.—Table I deals with the analysis of results obtained by the "Direct Smear" stained by gram's stain. At the onset, it requires to be clarified that in these figures of "Direct Smears" the word "streptococci" is meant to signify all members of that genus without differentiation. It is, therefore, difficult to ascribe any pathogenic role to "streptococci" reported in direct smears, as some of them may be of non-haemolytic and viridans strains. The presence of streptococci and Neisseria in various groups is studied. Although this gives a rough idea of their presence, the table shows interesting results in both normal and E. N. T. patient.

In "normal" out of 90 examined, 57 (63.3%) showed the presence of streptococci and 30 (33.3%) showed the presence of Neisseria group of organisms. Out of the total E. N. T. patients 78 examined, 61 (78.2%) showed the presence of streptococci—this figure being higher than normal group. Only 17 (21.7%) showed the presence of Neisseria. Patients with "Throat

diseases" showed much higher incidence of streptococci. As mentioned earlier for convenience the groups D, E, F & G are shown as separate entities, but these groups also are formed from special diseases of throat. Hence, overall predominance of streptococci over neisseria is very much marked in diseases of throat as compared to other diseases or as compared to normal groups.

Table II, shows the incidence of Beta-haemolytic streptococci carriers in case of normal persons. Out of 90 normal persons, 15 (16.6%) showed the presence of this organism. Looking to the various groups, the medical student group and Blood Donor groups, showed slightly higher percentage of incidence (19 to 20%) than the staff group. From 78 E.N.T. patients with various diseases, 17 (21.8%) showed the presence of Beta-haemolytic streptococci. As expected, in throat diseases group (A) and allied groups D, E, F, G, this percentage is significantly higher than group B & C and also the normals. This shows that in many cases, the etiology of the disease can be attributed to Beta-haemolytic streptococci. Text books in medicine traditionally mention that streptococcal infections, streptococcal carriers and streptococcal allergy are rare in tropics. Physicians and Bacteriologists in this country naturally do not subscribe to this view. The temperature in winter months is quite favourable for transference of this organism through areal change. These infections therefore tend to be more seasonal in our climate.

Table III shows the incidence of harbouring (Alpha-haemolytic) pneumococci in normals as well as E.N.T. patients. Out of 90 normals, 33 (36.6%) showed the presence of this organism, whereas out of 78 E.N.T. patients 28 (35.9%) showed its presence. This brings the incidence in both the categories to the same level. It should be observed that we have so far excluded cases of respiratory tract infection and the group of normal children. This may be responsible for lowering the incidence in the diseased and the normal group. Investigations on those groups will be continued during next winter season. For the time being, it will suffice to observe that pneumococcus has no predominant role in throat diseases as the streptococcus.

Table IV shows the incidence of various other bacteria such as haemolytic staphylococci, gram positive long and short rods, Alpha-haemolytic streptococci and gram negative rods. The findings here do not show much difference between the normals and diseased groups. A slight variation in gram positive rods or gram negative rods is of no significance as these bacteria were not studied in detail because they appeared to be of no known

pathogenic varieties. The findings are only recorded for showing the relative incidence of these bacteria in throats.

"Acid fast" staining of "Direct smears" made from the broth suspension showed negative results in all cases. In all, 120 smears were examined. This shows that it is difficult to find "Acid fast" organisms from throat swab material of normals and E. N. T. patients. The literature mentions that saprophytic acid fast bacilli may be found in mouth. Here too, we must mention that we excluded cases of dental diseases from our purview. Some further search will be made before we can deduce that owing to dietetic or other factors, saprophytic "Acid fast" bacteria in throat are a rarity in us.

DISCUSSION

Skadhauge and Kjaer⁵ have discussed the significance of haemolytic streptococci to complications following E. N. T. operations. Fox² studied the infections of upper respiratory tract and has discussed the role of Beta-haemolytic streptococcus parasitism in the infections. Fabricant¹ gives an excellent review of bacteriology of the ear, nose and throat. In the study of epidemiology of haemolytic streptococcal infection, Hamburger et al³ have thrown light on significance of nose to throat carrier ratios. Mickle and Oliver⁴ have discussed the pitfalls and problems met with in investigations such as these. Our findings are in general agreement with the above authors.

We have noted quite a demonstrable incidence of Beta-haemolytic streptococcal carriers in "Normal group" (16.6%) which can be most satisfactorily attributed to this "cold" part of the year. Our study in the "hot" season is being continued and we have noted definite decline in the incidence. These figures are being separately reported later. This high percentage of carrier rate during "winter" suggests increased possibility of spread of the organisms resulting in various sorts of clinical and subclinical infections, particularly of throat. As we have still not completed the grouping of haemolytic streptococcal strains, the conclusion that strains were mostly pathogenic is at best a presumptive one at this stage. Similarly increased incidence of isolation from groups A, D, E, F, G in E.N.T. patients undoubtedly prove that quite a good number of (E.N.T.) throat troubles are due to this group of organisms.

The presence of pneumococci in normal throats is also not uncommon—the incidence being 36.6%. As stated, this increased frequency is attributed to the cold months. Although we have

not typed these organisms, the pathogenic strains are known to be present in throats in winter season, as reported by other workers elsewhere. E.N.T. group showed nearly the same incidence—35.9%—suggesting that pneumococcus has no predominant role in throat troubles as the streptococcus.

Presence of diphtheroids and staphylococci was noted almost in every throat. About 50% diphtheroids were found to be haemolytic in normals and 40% in E.N.T. group. At times, difficulties were encountered in distinguishing between diphtheroids and streptococci on morphological evidence only.

The spirochaetes, in "Direct smears", made from the broth suspension, were detected to the extent of 20% in normals. Usually they were very faintly stained, and were very few in numbers and hence there is possibility that we might have missed them in few cases.

SUMMARY

The Bacterial flora of throats of normals and E. N. T. patients at random, is surveyed on a small scale in "Winter Season" of 1954-55 in Bombay. The data so obtained is reported with special reference to known pathogens. It appears that there is a quite significant pathogenic floral content in throats of normals and diseased persons. The former perhaps serve as carriers in closed communities. Owing to their higher resistance they do not show manifestations of disease while the latter have come down with the disease.

ACKNOWLEDGMENTS

Our thanks are due to Principal, Grant Medical College, Bombay, for laboratory facilities, to Superintendent J. J. Groups of Hospitals, for Hospital facilities, to volunteers who co-operated, to Dr. K. U. Shah, Hon. E. N. T. Specialist, J. J. Groups of Hospital, for active interest, support and co-operation and to Dr. A. N. Hazra for kind help and suggestions.

BIBLIOGRAPHY

1. Fabricant N. D. 1951—Eye, Nose, Throat Mon. **30**, 606-7.
2. Fox, N. 1947—Arch. Otolaryng. **46**, 762-772.
3. Hamburger M., Lemon H. M. & Platzer R. F. 1949, Amer. J. Hyg. **49**, 140-47.
4. Mickle W. A. & Oliver T. J. 1948, Proc. Soc. Exp. Biol. Med. **69**, 45-52.
5. Skadhauge K. & Kjaer M. 1945, Acta Otolaryng. **33**, 147-53.

TABLE I

Analysis of results of "Direct smear" examination of "Streptococci" and "Neisseria" in throat flora of Normals in age group 18-40 years and E.N.T. cases.

GROUPS.	Total Examined.	Streptococci.	Neisseria.
Normals			
I Staff	34	25 = 73.5%	13 = 38.2%
II Blood Donors	21	10 = 47.6%	7 = 33.3%
III Medical Students	35	22 = 62.8%	10 = 28.5%
Total	90	57 = 63.3%	30 = 33.3%
E.N.T.			
A. Throat Diseases	38	29 = 76.3%	7 = 18.4%
B. Nose Diseases	11	7 = 63.6%	3 = 27.2%
C. Ear Diseases	10	6 = 60.0%	4 = 40.0%
D. Pre-Tonsilectomy	13	13 = 100%	3 = 23.07%
E. Post-Tonsilectomy	2	2 = 100%	0 = 0%
F. Diphtheria (?)	2	2 = 100%	0 = 0%
G. Miscellaneous	2	2 = 100%	0 = 0%
Total	78	61 = 78.2%	17 = 21.7%

TABLE II

Table showing the incidence of "Beta-haemolytic streptococci" in throat flora of Normals in Age-group 18-40 years and of E.N.T. cases.

GROUPS.	Total Examined.	Isolation Positive.	Incidence.
Normals			
I	34	4	11.7%
II	21	4	19.04%
III	35	7	20.0%
Total	90	15	16.6%
E.N.T.			
A	38	8	21.05%
B	11	1	9.09%
C	10	0	0.0%
D	13	6	46.1%
E	2	0	0.0%
F	2	2	100%
G	2	0	0.0%
Total	78	17	21.8%

TABLE III

Table showing the incidence of "Pneumococci" in throat flora of Normals in age-group 18-40 years and E.N.T. cases.

GROUPS.	Total Examined.	Isolation Positive.	Incidence.
Normals			
I	34	12	35.2%
II	21	10	47.6%
III	35	11	31.4%
Total	90	33	36.6%
E.N.T.			
A	38	13	34.2%
B	11	6	54.5%
C	10	3	30.0%
D	13	3	23.0%
E	2	2	100.0%
F	2	1	50.0%
G	2	0	0.0%
Total	78	28	35.9%

TABLE IV

Table showing the relative incidence of: (1) Haemolytic staphylococci, (2) Alpha-haemolytic streptococci, (3) Gram positive rods, (4) Gram Negative rods in throats of Normals and E.N.T. cases.

GROUPS.	Total Examined.	Haemolytic Staphylococci.	Alpha Haemolytic Streptococci.	Gram Positive rods.	Gram Negative rods.
Normals					
I	34	8	8	17	8
II	21	3	10	17	6
III	35	4	12	24	10
Total	90	15 = 16.6%	30 = 33.3%	58 = 64.4%	24 = 26.6%
E.N.T.					
A	38	8	12	19	4
B	11	3	4	4	1
C	10	0	5	4	3
D	13	2	2	10	1
E	2	0	0	1	0
F	2	1	1	0	0
G	2	0	1	1	1
Total	78	14 = 17.9%	25 = 32.06%	39 = 50.0%	10 = 12.8%

Use of Chloromycetin in the Local Treatment of Otitis Media

(A REVIEW OF 33 CASES)

BY

H. HAZRA, M.B. (Cal.), F.R.C.S., (Edin.), D.L.O. (Lond.),

Reader in E. N. T. and Surgeon-in-charge E. N. T. Department,
S. C. B. Medical College, Cuttack.

In recent years, broad spectrum antibiotics such as Terramycin, Aureomycin and Chloromycetin have been widely used in the local treatment of suppurative Otitis Media.

It has been found that many cases of chronic suppurative Otitis media do not respond to local treatment with Terramycin or Aureomycin even when sources of infection in the tonsils, adenoids or paranasal air-sinuses have been eliminated before commencing the treatment of the ear itself. In these cases there is frequently secondary-infection by gram—ve organisms such as *Bacillus Pyocyaneus* which is neither sensitive to Terramycin nor Aureomycin. Lately this difficulty has been overcome by the addition of Polymyxin. B. Sulphate, which is effective against *B. Pyocyaneus*. But the prices of Terramycin and Aureomycin Otic solutions are still prohibitive and beyond the reach of most of the patients in this country. This also holds good in the case of "Chloromycetin Topical".

Chloromycetin has been found to be useful in the treatment of bacterial infections due to both gram + ve and gram—ve organisms. It is particularly effective in the treatment of gram—ve infections. Since gram—ve organisms are responsible for many ear infections, Ausband and Harrill felt that clinical trial of Chloromycetin in local therapy of such conditions was warranted. The following method was adopted by them:—

A solution of chloromycetin was made in 70% alcohol, the strength of the solution being 250 mg. in 14. c.c. After having a culture of the aural discharge, the ear was thoroughly cleaned and the treatment was started. 5 drops of the solution were instilled into the affected ear every 6 hours without cleaning the external auditory meatus.

As this method is much more economical we thought of giving it a trial in some cases in our hospital. Earlier we treated about 10 cases of Chronic Suppurative Otitis Media with "Chloromycetin Topical" (A 10% solution of Chloromycetin in Propylene Glycol) ear drops but though the results were encouraging we had to abandon this method because of the high price of the preparation and consequently limited scope for its use.

This paper deals with a series of 33 cases treated by Ausband and Harrill's method (as described above). We have not tried other methods such as plugging the ear with cotton wick soaked in Chloromycetin solution and in sufflation of Chloromycetin powder into the external auditory meatus. The results of the investigations and treatment are given in a tabular form.

All the cases in this series were admitted into the Hospital and were subjected to thorough investigation before commencing the treatment. The investigation consisted of examination of tonsils, adenoids and paranasal air-sinuses and bacteriological examination of the aural swab to identify the organism responsible.

From the table it will be evident that the commonest organism encountered in this series was—

- (1) *Ps. Pyocyaneus*. This is followed by:—
(2) *Staphylococcus Aureus* (Coagulase negative). (3) *Staphylococcus Aureus* (Coagulase positive). } In order of frequency.
(4) *Staphylococcus Albus* (5) *B. Coli* (6) *Bacillus Proteus Vulgaris*
(7) *Klebsiella* (8) *Streptococcus* (9) *Pneumococcus* (10) *Diphtheroids*.

Our findings are somewhat different from those of Lewis and Gray. In their series the order is as follows:—

- (1) *Proteus Vulgaris* (Commonest) (2) *Staph Aureus* (3) *Ps. Pyocyaneus* (4) *Coliforms*. } In order of frequency.

In the series investigated by Ausband and Harrill the organisms were found in the following order:—

- (1) *Staphylococcus* (2) *Diphtheroids* (3) *Pseudomonas* (4) *Proteus* (5) *Aerobacter Aerogenes*. } In order of frequency.

In their series approximately half the ears yielded mixed cultures. In our series 8 out of 46 ears yielded mixed cultures. Our series consists of patients of ages varying from 1½ to 50 years.

Those cases where some source of infection was suspected to be present in the tonsils, adenoids or paranasal air-sinuses, were subjected to thorough investigation and treatment of such septic foci before commencing the treatment of the ear itself.

From the table it will be seen that 41 out of 46 (89.13%) diseased ears were cured. Of these 41 cured ears there was relapse in 3 cases (7.3% of cured cases). In 5 out of 46 (i.e. 10.8%) there was no response to treatment except that in one case there was some improvement. In two of these 5 cases there were posterior marginal perforations with granulations and therefore it was quite unlikely that they would be cured without operation. In these cases this method of treatment was tried on an experimental basis.

From our observations we have come to the following conclusions :

(1) In those cases where there is attic or posterior marginal perforations with granulations or cholesteatoma this method will also fail like other conservative methods.

(2) This method does not give any guarantee against recurrence.

(3) In those cases where there is associated septic foci in the tonsils, adenoids or sinuses it will also fail like other conservative methods unless these foci are removed prior to the treatment of the ear itself.

This method has some advantages over other methods of local chloromycetin therapy, such as plugging the ear with cotton wick soaked in Chloromycetin solution and insufflation of Chloromycetin powder into the external auditory meatus. The advantages are as follows :—

(1) It is simpler and can be carried out at home.

(2) The cost of the treatment is low ; one capsule of 250 mg. is sufficient to cure the ear in most of the cases.

It cannot be denied that we have tried this method only in a small number of cases and as such its value cannot be properly assessed. But considering the high percentage of cure, the simplicity of treatment and the low cost, we feel that it is worthwhile giving it an extensive trial.

Lastly, I must mention a few words about "Chloromycetin Topical" (A 10% solution of Chloromycetin in propylene Glycol). I have used it to dress a large number of mastoid cavities after

radical mastoidectomy and found that the results are encouraging. It prevents formation of excessive granulation tissue and also prevents sepsis and thereby helps in quicker and better epithelialisation.

SUMMARY

1. 33 patients with 46 diseased ear were subjected to investigation and treatment.

2. The investigation consisted of:—

(a) Bacteriological examination of the aural swab.

(b) Clinical examinations of the tonsils, adenoids (particularly in children), and paranasal air sinuses for any source of infection.

(c) X-ray of the paranasal air sinuses in suspected case.

(d) X-ray of the Mastoid process where bone necrosis was suspected.

3. The date on which treatment was started and the date when the discharge from the ear stopped have been noted and the results have been tabulated.

4. The limitations of Ausband and Harrill's method have been discussed and its advantages over other methods of local treatment of otitis media with chloromycetin have been mentioned.

ACKNOWLEDGMENT

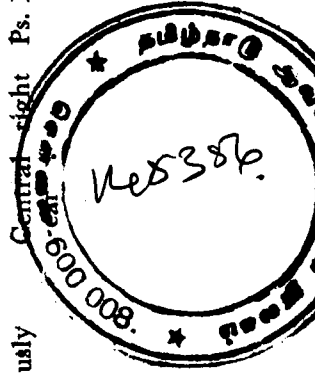
I wish to express my gratitude to Dr. S. C. Das, Superintendent, S. C. B. Medical College Hospital, Cuttack, for his kind permission to publish the case records. I should also thank Dr. A. M. Tripathy the Professor of Pathology and Dr. G. P. Mohanty, the Assistant Professor of Pathology, S. C. B. Medical College for carrying on the Bacteriological examination of the aural swabs. Lastly, I must thank Dr. P. C. Babarta, Junior Surgeon E. N. T., for helping me to collect the case records and to carry on the investigations.

REFERENCES

1. Ausband, J. R. and Harrill, J. A. North Carolina Medical Journal, Volume 13, Page 568, 1952.
2. Lewis, S. Roland, and Gray, J. D. British Medical Journal, October 20, 1951.

Case.	Age of the patient in years.	Duration of Disease.	Type of perforation	Aural swab culture report.	Treatment adopted.	Results.
1	20	Right ear - 8 months Left ear - 8 months	Large central in both the ears.	Right ear Staph Aureus Pyocyanus Lt. ear Do.	Chloromycetin solution (250 mg. in 14 c.c. of 70% alcohol) dropped into the ear every 6 hours 5 drops each time. do.	Right ear Tr. started on 11-11-'53. Discharge stopped on 17-11-'53. Left ear Discharge stopped on 15-11-'53. Treatment started on 17-11-'53. Rt. ear Discharge stopped on 13-12-'53. Lt. ear Do.
2	33	Rt. ear - 20 years Lt. ear - 20 years with occasional remission	Rt. ear-large central. Lt. ear-sub total	Rt. ear-Klebsella + Ps. Pyocyanus Lt. ear Do.	do.	Treatment started on 28-11-'53. Rt. ear } Discharge stopped on Lt. ear } 2-12-'53.
3	8	Rt. ear - 4 months Lt. ear - 2½ months	Central in both ears Not very large	Both ears Staph Aureus Streptococcus Pneumococcus Diphtheroid	do.	Treatment started on 28-11-'53. Rt. ear } Discharge stopped on Lt. ear } 2-12-'53.
4	8	Lt. ear - 2 years	Central	B. Coli Staph Aureus	do.	Treatment started on 13-12-'53 Discharge stopped on 28-12-'53.
5	1½	Rt. ear - 1 month	Small central	Klebsella	do.	Treatment started on 16-12-'53. Discharge stopped on 19-12-'53.
6	10	Both ears - 7 years with occasional remissions	Sub - total in both ears Associated with adenoids and septic tonsils	Both ears Staph Albus	Tonsils and adenoids removed before commencing treatment	Treatment of the ear started on 23-12-'53. Lt. ear Discharge stopped on 28-12-'53. Rt. ear Discharge stopped on 30-12-'53.

7	22	Lt. ear - 2 months	Central Perforation	Stap Albus	Chloromycetin therapy by Ausband & Harrill's method	Treatment started on 4-1-'54. Discharge stopped on 10-1-'54.
8	21	Rt. ear - 10 years with occasional remissions	Large central	B. Coli. Staph Albus	do.	Treatment started on 15-1-'54. Discharge stopped on 30-1-'54.
9	25	Rt. ear - 8 years Lt. ear - 6 years	Large central in both ears	Both ears Ps. Pyocyanus	do.	Treatment started on 12-2-'54. Discharge stopped in left ear on 16-2-'54. Rt. ear on 17-2-'54.
10	22	Rt. ear - 3 years Lt. ear - 3 years with periodic remission	Central in both ears	Both ears Proteus Vulgaris	do.	Treatment started on 25-2-'54. Rt. ear } Discharge stopped on Lt. ear } 28-2-'54.
11	9	8 years with intermittent remissions and exacerbations	Large central in both the ears	Ps. Pyocyanus grown from both the ears	Chloromycetin 250 mg. dissolved in 14 c.c. of 70% alcohol. 5 drops of this solution instilled into each ear 4 times a day without cleaning the ext. auditory meatus.	Treatment started on 29-3-'54. Discharge stopped on 1-4-'54 in both the ears.
12	6	2 years continuously	Central slight	Ps. Pyocyanus	do.	Treatment started on 6-4-'54. On 17-4-'54 Discharge became watery. On 20-4-'54 Discharge stopped.



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Case.	Age of the patient in years.	Duration of disease.	Type of perforation.	Aural swab culture report.	Treatment adopted.	Results.
13	50	10 years with occasional exacerbations and remissions. Duration of present attack 4 days	Sub-total perforation in left ear	Ps. Pyocyanus	Chloromycetin 250 mg. dissolved in 14 c.c. of 70% alcohol. 5 drops of this solution instilled into each ear 4 times a day without cleaning the ext. auditory meatus.	Treatment started on 17-4-'54. Discharge stopped completely on 21-4-'54. But relapsed about 15 days later when it responded to the same treatment for 6 days.
14	3	3 years with occasional remissions. Had acute exacerbations 6 months back since then the discharge continuing	Rt. ear-central perforation	No growth	do.	Treatment started on 17-4-'54. Discharge stopped completely on 24-4-'54. The patient was discharged from Hospital on 26-4-'54 but there was relapse on 28-4-'54.
15	17	8 years with remissions. Present attack lasts for 2 months	Large Central Perforation in left ear	Staph Aureus (Coagulase negative)	do.	Treatment started on 28-4-'54. Discharge stopped on 10-5-'54.
16	32	4 days	Small central perforation—left ear	Staph Aureus (Coagulase positive)	do.	Treatment started on 14-5-'54. Discharge stopped on 23-5-'54.
17	15	14 years with intermittent remissions	Large Central perforation Right ear	Ps. Pyocyanus grown	do.	Treatment started on 24-5-'54. Discharge stopped on 27-5-'54.
18	8	2 years continuous discharge	Post Marginal perforation in the right ear with granulations Discharge foul	Ps. Pyocyanus grown	do. —plus application of copper sulphate to the granulations	Treatment started on 29-5-'54. but the discharge did not stop even upto 29-6-'54. Radical Mastoidectomy had to be done on
19	22	2 years with remissions. This time 2 months both ears	Large central perforation both ears	Staphylococcus Aureus (Coagulase + ve) both ears	do. —plus application of copper sulphate to the granulations	Treatment started on 5-6-'54. Discharge stopped on 20-6-'54.
20	15	One week. Traumatic perforation followed by infection	Central right ear	Ps. Pyocyanus	do.	Treatment started on 9-6-'54. Discharge stopped on 19-6-'54.
21	20	Previous attack 2 years back this time 6 months	Central perforation both ears One ear dry at present (Lt. ear)	Rt. ear - Staph Aureus (Coagulase—ve)	do.	Treatment started on 4-6-'54. Discharge stopped on 21-6-'54.
22	21	Since childhood with remissions. Duration of discharge this time 15 days	Central perforation both ears	Lt. ear - staph Albus Rt. ear - staph Aureus (Coagulase—ve)	do.	Treatment started on 6-7-'54. Discharge stopped on 21-7-'54.
23	32	Lt. ear 22 days	Small Central perforation	Staph Aureus (Coagulase—ve)	do.	Treatment started on 23-8-'54.
24	35	Lt. ear - 8 months with occasional remissions. This time 7 days	Big Central perforation	Ps. Pyocyanus	do.	Discharge stopped completely on 27-8-'54. Treatment started on 26-8-'54.
25	12	1 year, in Left ear with intermittent remissions	Small Central	Ps. Pyocyanus	do.	Discharge stopped completely on 2-9-'54. Treatment started on 30-10-'54. Discharge stopped on 5-11-'54.

Casc.	Age of the patient in years.	Duration of disease.	Type of perforation.	Aural swab culture report.	Treatment adopted.	Results.
26	26	Since childhood with remissions in the left ear continuous in the right ear	Lt. ear - large Central Rt. ear - Posterior marginal with granulations	Rt. ear - Ps. Pyocyanus Lt. ear - do.	Chloromycetin 250 mg. dissolved in 14 c.c. of 70% alcohol. 5 drops of this solution instilled into each ear 4 times a day without cleaning the ext. auditory meatus—plus application of copper sulphate to the granulations in the Rt. ear	Treatment started on 27-11-'54. Lt. ear - dry on 13-12-'54. Rt. ear - discharge did not stop even upto 30-12-'54.*
27	25	Rt. ear - 1½ years Lt. ear - 2½ years	Rt. ear - central Lt. ear - central	Rt. ear - staph Albus Lt. ear - Ps. Pyocyanus	Chloromycetin 250 mg. in 14 c.c. of 70% alcohol Drops instilled every 6 hrs. 5 drops each time	Lt. ear - Treatment started on 10-1-'55. Discharge stopped on 30-1-'55. Rt. ear - 12-1-'55. Discharge stopped on 19-1-'55. Rt. ear - Treatment started on 2-1-'55. Rt. ear dry on 22-1-'55. and drops discontinued but relapsed on 2-2-'55. With further treatment became dry on 21-2-'55. Lt. ear - treatment started on 7-1-'55. Discharge stopped completely on 12-2-'55.
28	8	Rt. ear } since childhood Lt. ear } hood Mastoidectomy (Modified radical) done 1 year back. After operation discharge stopped but having discharge for last one month	Rt. ear large Central Lt. ear - central	Rt. ear - Ps. Pyocyanus Lt. ear - Ps. Pyocyanus	do.	
29	12	Rt. ear - 5 years Lt. ear - 5 years	Large central both ears	Rt. ear - Ps. Pyocyanus Lt. ear - do.	do.	Treatment started on 24-1-'55 and discontinued on 10-3-'55 Discharge became thin and mucoid but did not stop.* Treatment started on 1-3-'55. Discharge stopped on 9-3-'55.
30	5	Rt. ear - 3 years with remissions at intervals	Small central in Rt. ear	Staph Aureus (Coagulase—ve)	do.	
31	16	Since childhood. Intermittent at 15 days to 1 month intervals. Duration of present attack - 3 months	Rt. ear - large Central dry Lt. ear - large central with polypoidal granulations	Lt. ear - staph Albus and Ps. Pyocyanus	Chloromycetin 250 mg. in 14 c.c. of 70% alcohol dropped into the left ear only. (5 drops every 6 hrs. without cleaning the ears)	Treatment started on 17-3-'55. Discharge stopped on 29-3-'55.
32	18	From childhood Exact age when it started could not be mentioned	Rt. ear - subtotal perforation	Staphylococcus Aureus (Coagulase—ve) Ps. Pyocyanus	do.	Treatment started on 6-5-'55. Discharge did not stop even upto 6-6-'55.*
33	23	7 months	Lt. ear - large Central perforation	Ps. Pyocyanus	do.	Treatment started on 21-5-'55. Discharge stopped on 30-5-'55.

Abstracts

Gelatinized Bone—Its role in Maxillo facial Surgery

By D. MAYER & W. SWANKER, New York.
(The Am. Jr. of Surgery, Dec. 1954.)

Various substances of heterogenous nature such as beef bone, ivory and metals and acrylic resins have been employed to reconstruct the skeletal defects. But they are not found to be ideal due to their hardness and rigidity, and their untenable position due to slight pressure or trauma. Homogenous material such as cartilage and bone are available in plenty but they do not stand in comparison with autogenous material. The availability of cartilage material is restricted to a single costal cartilage but post operative tenderness usually persists for a long time due to poor healing. Cancellous bone is readily obtained from iliac crest with minimum of surgical effort and minimal postoperative discomfort. The finely divided particles revascularise most readily stimulating healing and averting absorption. In order to facilitate handling of this material a conglomerate mass is obtained by regular mixing ground bone with whole blood and powder gelfoam. The preferable formula after experimenting by grafting the same in chorio allantoic membrane of hen's egg, revealed to be as follows: Ground cancellous bone: wholeblood: 2:1 by volume and 8:1 with powder gelfoam. It was noted that healing was accelerated by 40 p.c. by grafting the same in Rabbits. The regrowth rate of ground bone mass was twice that of periosteum alone and $\frac{1}{3}$ greater than that from bone chips.

Introducing this gelatinous mass may be done by syringing with a hallow needle. Position is retained with a pressure bandage or a moulded splint of dental impression compound.

Author has treated 18 cases of mandibular and malar deformities. The results are gratifying.

P. P. KARNIK, Bombay.

Recent developments in the management of Brain abscess

By WALPOLE LEWIN, Oxford.
(B. M. J. March, 1955.)

Considerable advances in the diagnosis and treatment has led to improved results. Mortality of 46% before the advent of penicillin has been brought down to 19% in recent years. The modern trend of treatment is perhaps best reflected in the treatment of abscesses resulting from paranasal sinuses and otogenic infection. Only one such case died in 20 cases.

The 50% of abscesses are due to paranasal sinusitis and ear infection. Therefore effective treatment of Ear, Nose and Throat infections is the most important preventive measure in the field. Particular attention is also necessary for fractures of the skull which implicate the sinuses and mastoid regions.

Gross symptoms and signs due to cerebral oedema and encephalitis still occur, but in many cases now-a-days the early use of antibiotics, signs of brain abscesses may be attended by only relatively mild changes in the patients condition. And thus the risk of exclusion of this diagnosis may be made on that the patient is not ill enough. But the very fact that the patient is not as well as he ought to be should lead to neurological examination

Frontal abscess might present by mild reflex change down one side of the body or possibly a little facial weakness or an isolated fit or nocturnal incontinence. Temporal lobe abscess may produce a visual field defect in the upper homonymous field which require careful perimetry. A cerebellar abscess usually gives rise to nystagmus. These relatively mild signs when looked for, are present much more often than is thought to be the case.

Lumbar Puncture may be invaluable but should be used with caution in cases in signs of raised intracranial tension. E. E. G. helps to locate an abscess and also in differential diagnosis from such condition as thrombophlebitis. Focal disturbance consists essentially of a high voltage delta activity in the vicinity of the lesion together with a local phase reversal. This has the merit of being easily performed without much disturbance to patient. Recent development in the diagnosis of brain abscesses has been the use of angiography but it does not afford evidence of the true nature of the lesion. In abscess cases the appearance is one of Blood vessel to displacement by an avascular space occupying lesion.

Antibiotics, usually penicillin do so much to control the invasive stage of encephalitis and cerebral oedema that it is possible to simplify the surgery of the acute abscess and most surgeons are agreed today that the first treatment of choice is simple needle aspiration of the abscess with local instillation of penicillin. Taylor favours in addition the routine use of intraventricular penicillin as it lessens the chances of spread of infection to C S F spaces. The part of success of aspiration is due to accurate location of the abscess. The operation is done through a clean incision and author has abandoned attempts of drainage along entry tract as danger of cerebral fungus. Similarly open drainage is rarely effective after the first escape of pus and the insertion of tubes and subsequent manipulations may cause further damage to brain and risk of rupture of the abscess and it may leave undrained loculus of abscess. Sometimes in acute stage the above treatment may not relieve the raised pressure and a decompression operation may also be required. In cases of loculated abscesses excision of the phlegmon may be indicated. But this is rarely advised as it means sacrifice of recoverable cerebral tissue and increased risk of resultant disability. Therefore to improve the result of this stage requires that the surgeons should have all these methods at his disposal and consider each case on its merits. Rupture of abscess in ventricles remain the major problem.

The management of the later stages is still debatable. Some surgeons believe that if further aspiration yield no pus and provided the patient is well, no more need been done. But majority advice air studies in the quiescent stage. But sizable collection may not be shown by radiographic changes and a presence of loculus or thick pus will give—ve results at the aspiration. Author has also seen several examples where sudden and dangerous enlargement of an abscess has occurred in a patient previously doing well. These facts have led to injection of radio-opaque substances in the abscess cavity. Its subsequent fate may be useful in noting a loculus or dangerous expansion of abscess for timely aspiration. This is related to the sensitivity of the causal orgs. to antibiotics. It is clear that only excision of the whole area can make one certain of ultimate cure provided it can be done without increasing the patients disability or materially increasing the mortality. Therefore excision requires consideration. During the last four years author has excised 18 abscesses (62% of survivors of acute stage) with no deaths.

Author is of the opinion that the cases of mastoiditis and paranasal sinus infection, brain abscess should be first brought under control and the primary focus may be deferred to convalescent stage.

In discussing the sequelae, author points out to three main late effects namely (1) Recurrent infection (2) permanent neurological disability which are happily uncommon. (3) Epilepsy remains a major problem. 45% of survivors of cerebral abscess develop it. Its incidence is highest with multiple abscesses and that too 50% with frontal and 34% with temporal site. But epileptic attacks are infrequent—Fortunately with convulsant drugs majority of patients are able to lead a normal life. Early diagnosis and antibiotics will lower the scar formation which is held responsible for epilepsy. Dr. Jooma et al have shown that following excision of abscesses the fits are less common (44%) than following repeated aspiration (72%). And as the danger of fits due to a frontal scar is maximum as it occurs without warning and in this site status epilepticus is common. Therefore there would appear to be a good case for excision of a frontal abscess on the grounds of epilepsy alone and more generous excision may be done at this site without the danger of permanent disability.

P. P. KARNIK, Bombay.

[Above article is written by a neurosurgeon, and his observations as regards treatment of otogenic abscesses is not agreed upon by most of the F. N. T. Surgeon Maxwell Ellis maintains 'the route of access to them is the route by which they arrived' and cerebral fungus is the sign of persisting rise in intracranial pressure probably indicating a persisting intracranial lesion. Hardly any E.N.T. Surgeon has seen a cerebral fungus with this route of approach.]

Study of Otogenic Tetanus

By N. J. SHAH,

(Indian Journal of Medical Sciences, Feb. '55.)

Author has presented a clinical and bacteriological study of 30 Cases of Tetanus with otorrhoea treated in Tetanus ward of K.E.M. Hospital, Parel. Isolated case reports published in foreign journals suggest the rarity of this series of cases. Out of total number of 158 cases of Tetanus admitted during the study period of six months 30 were found to be associated with Otorrhoea i.e. 18.9%. In clinical history following points were noted as records Otorrhoea—Injury to tympanic membrane with a prick, and duration of otorrhoea, and any other injury over the body. Fifty percent of cases were noted below 5 years of age and 60% were of male sex. It was less common over the age of 10 years. Thirty percent were associated with acute stage and 70% with chronic otitis media. In 17 cases only Rt. side, in 10 cases left side and 3 cases of bilateral otorrhoea.

Bacteriological study done by taking a swab from Ext. ear within 24 hrs. of admission, showed positive result in 45% of cases, negative in 12 cases. Mortality rate was 26.6% as compared to non-otogenic type which was 48.4%. Author has also presented two cases of recurrent tetanus.

In discussing the problem, author states that otitis media forms one of the common causes in children. The other contributory factors are poor living condition, habits of children to play about with dirt and also lack of proper treatment of otorrhoea. It is more associated with chronic stage of otorrhoea. Twelve cases gave history of introduction of Foreign body in

the diseased ear. Author is of the opinion that it is unlikely to have any contamination through Eust. orifices, as Speath has proved that very few normal human beings harbour tetanus orgs. in their intestines.

Prognosis is good in these cases which is shown by mortality rate which does not agree to the rule that the nearer the primary focus to the brain the graver the prognosis. It might be associated to a latent infection and the possibility of low grade infection not sufficient to cause symptoms and yet resulting in partial immunity. Severity and high mortality was associated more with acute otitis media, and otorrhoea must be treated due to danger of recurrence.

P. P. KARNIK, Bombay.

Cardiospasm

By G. M. BROWNRIGG, Newfoundland.

(Cand. Med. Ass. Jr. Jan. 1955.)

Brief summary of the recent literature on functional obstruction of the cardioesophageal region is submitted with a report of four cases treated with extramucosal myotomy.

The most generally accepted view as regards closing mechanism is due to slinglike action of the inner and oblique muscles layers of stomach which partially encircles the cardia. The presence of sphincter action is discarded. There is a great degree of confusion with respect to treatment of this condition. Frequent treatments with dilatation entails much of economic sacrifice as to make them unattractive. This fact has led to experiment with a more direct surgical approach to the problem. Mikulicz trans-abdominal gastrotomy with retrograde digital dilatation provides only temporary benefit at the cost of laparotomy and morbidity due to gastrotomy. There is overwhelming agreement that the procedure of cardioplasty similar to Finney pyloroplasty leads to oesophagitis and peptic ulceration at the stoma. Wangenstein has proposed resection of dilated oesophagus combined with resection of entire acid bearing portion of stomach with pyloroplasty and anastomosis of antrum with oesophagus. But this is a formidable procedure and applicable to only remitted cases of megaesophagus.

Simple Myotomy advocated by Meller in principle to Ramstedt procedure for pyloric stenosis has gained considerable acceptance. Nay has advocated transthoracic approach which has a considerable advantage of greater length of exposure of oesophagus and helps to confirm the absence of neoplastic obstructive lesion at the site of obstruction. Routine oesophagoscopy and negative biopsy cannot exclude diagnostic errors in all cases e.g. tinitis plastica type of Ca.

Author has used transthoracic approach in four cases. He has noted that there was no evident dilatation of esophagus which the x-ray findings has led him to expect. Similarly there was no appreciable hypertrophy of the constricting muscle band. Immediate results following operation were gratifying but x-ray findings are disappointing. But the delay in the passage of the barium into stomach observed preoperatively is abolished postoperatively. There was no significant incidence of oesophagitis or ulceration of the oesophagus.

P. P. KARNIK, Bombay.

Association Notes

PROVISIONAL PROGRAMME VIII ANNUAL CONFERENCE

OF THE

Association of Otolaryngologists of India
(TRIVANDRUM SESSION DECEMBER 1955)

Thursday the 29th December, 1955.

- A. LUNCH at places of Residence.
- B. Meeting of the Governing Body—Evening at Medical College, Ulloor, Trivandrum.
- C. Tea at Medical College.
- D. DINNER—Place of Residence.

Friday the 30th December, 1955.

Bed Coffee. } Place of Residence.
Breakfast. }

- A. Opening of Conference.
After Photo.
- B. Speech.
- C. Inauguration of Scientific Session by
- D. If there is any stalls exhibited by firms Opening by
- 1 p.m. E. LUNCH. At 1 p.m. Meeting Place.
- F. Interval. 1½ hours.
- Afternoon. 2-30 p.m. Scientific Session.
(Paper Reading)
- 4 p.m. Tea.
- 5 to 6-30 p.m. Scientific Session.
- 8 p.m. DINNER at Meeting place. Presidential Dinner.
- 9-30 p.m. to 10-30 p.m. Entertainment.

Saturday the 31st December, 1955

Bed Coffee. } at the place of Residence.
Breakfast. }

- 9 a.m. Scientific Session.
- 12-30. LUNCH.
- 2-30. Scientific Session.
- 4 p.m. Tea.

After tea.

Sight Seeing—Beach.
Sea bathing at Kovalam etc.

New years Eve.

- 8 p.m. Subscription Dinner—Open air—College Lawn.
- 9-30 to 10-30 p.m. Entertainment.

ASSOCIATION NOTES

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Sunday the 1st January, 1956

Bed Coffee. Breakfast.

Visiting. Temple. or Church. or Mosque

9-30 a.m. General Body Meeting. 2 hours.

12-30. LUNCH.

TRIP TO KANYA KUMARI.

Tea & Bath.

6 p.m. Start return journey.

8-30 p.m. DINNER.

Monday the 2nd January, 1956

DISPERSAL ARRANGEMENTS WILL BE MADE.

A. R. THAMPI,

Secretary.

TRIVANDRUM

(Session 30th Dec. 1955 to 1st January 1956).

It lies on both air and sea routes from Bombay and Madras. Rail communications with all parts of India. It is a modern city, the chief attraction is Chitralaya opened in 1935 and has a fine collection of ancient medieval and modern Indian paintings. Some examples of Chinese and Japanese are also there. One should also visit the Fort Zoo and the famous Padmanabhaswami temple, which is architecturally distinct from the Dravidian styles of the South. This Temple is supposed to be 2,300 years old.

Those members fond of sea bathing may visit Kovalam, a few miles away.

Fifty four miles south-east lies Cape Comorin famous for its Kanya Kumari Temple. On a full moon night one can see the Sun setting and the Moon rising, both from the same sea. It is a ninety minutes run each way by car.

Mascot hotel Trivandrum has 17 rooms and charges about Rs. 17-8-0 per head per day, where as the Cape hotel at Cape Comorin has 9 rooms at Rs. 15 per head per day. But special arrangements are to be made and the local Secrerary will inform you about the same. Please let him know, how many of you are going to Trivandrum, whether vegetarian or not, and whether travelling by Air, Rail or Sea. His address is:

“Dr. Kuriyan George, D.L.O., Medical College Hospital, Trivandrum”. If you intend reading a short original paper of 15 minutes duration, please let him know the title now and send me a summary by 1st Nov. 1955 and a copy of the manuscript by 30th Nov. 1955, so as to be included in the Scientific programme. So far we have not succeeded in getting the Air* or Rail concession.

C. A. AMESUR,

8, Jorawara Bhuwan,
93, Queens Road, Fort, Bombay-1.

*Please note there is Air Concession available at present.

AIR CONCESSION FOR TRIVANDRUM

The Chief Traffic Manager, Indian Airlines Corporation in his letter No. CTM/17/277/3156 dated the 7th September 1955 to Dr. Ram says, "We have pleasure in informing you that the delegates attending the above conference will be granted the following concession for travel by our services :—

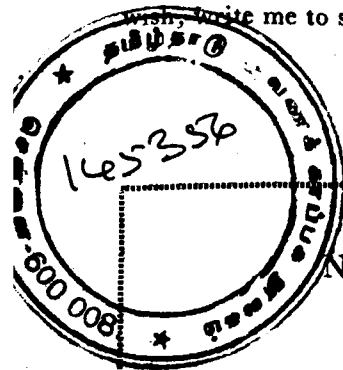
1. $1\frac{1}{2}$ single fare will be charged for round trip.
2. Single journeys will be charged full.
3. Delegates to this conference must be in possession of necessary letters of authority issued by the Head Quarters of the Association.

As it has already been intimated vide our letter No. CTM/2098 dated the 25th January, 1955, we regret we are unable to accede to your request to extend this concession to the delegates wives.

Please travel by air and save time. Early booking desirable. If you wish, write me to send the authority.

C. A. AMESUR.

93, Queens Road, Fort, Bombay-1.



NOTICE TO CONTRIBUTORS

1. Original Articles are accepted on the condition that they have not been published elsewhere.
2. Manuscripts should be typewritten, on one side only of the paper and well spaced.
3. Orders for reprints should be sent along with the articles.
4. Editorial communications may be addressed to Dr. P. V. Cherian, 5, Victoria Crescent, Egmore, Madras.

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