

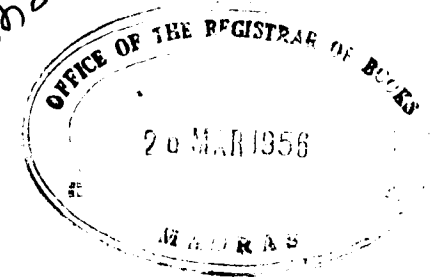
Vol. VIII, No. 1

MARCH 1956

1555

1555
1-56

328



INDIAN JOURNAL
OF

OTOLARYNGOLOGY



PUBLISHED BY

The Association of Otolaryngologists of India

ADVERTISEMENT TARIFF

		<i>Full Page</i>	<i>Half Page</i>
		Rs.	Rs.
BACK COVER PAGE	...	200/-	Not available
INSIDE COVER PAGE	...	125/-	75/-
FULL ORDINARY PAGE	...	100/-	65/-

★

**10% Discount if paid in
Advance for 4 insertions**

★

Address all correspondence to :

THE EDITORIAL SECRETARY

Indian Journal of Otolaryngology

1-A, Marshall's Road, Egmore, Madras-8.

INDIAN JOURNAL OF OTOLARYNGOLOGY

Vol. VIII, No. 1

MARCH 1956

Official Scientific Journal of the Association of
Otolaryngologists of India

Editorial Board

Chairman: Dr. TULSI DAS

Editor: Dr. V. S. SUBRAMANIAN

Treasurer: Dr. C. M. LEELAVATHY

Editorial Secretary: Dr. U. ANANDA RAO

INDIAN JOURNAL OF OTOLARYNGOLOGY

LEMPERT HOSPITAL

1-A, MARSHALL'S ROAD

EGMORE, MADRAS-8

INDIAN JOURNAL OF OTOLARYNGOLOGY

MEMBERS OF THE EDITORIAL BOARD

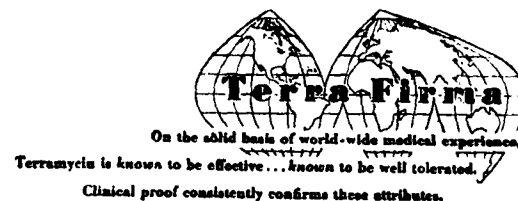
Delhi Branch	...	Dr. S. N. Kaul
Trivandrum Branch...		Dr. Kurien George
Amritsar Branch	...	Dr. G. M. Taneja
Visakhapatnam	...	Dr. B. Tirumala Rao
Calcutta Branch	...	Dr. N. Banerjee
Hyderabad Branch	...	
Patna Branch	...	
Madras Branch	...	Dr. T. S. Shetty
Bombay Branch	...	Dr. L. H. Hiranandani

CONTENTS

	Page.
The Transpalatal Surgical Approach for removal of Nasopharyngeal Fibromata	1
Dr. R. N. Misra, M.S., D.L.O. (Lond.) and Dr. D. S. Shardana, M.S. (E. N. T.)	
Otitis Externa Granulosa	16
Dr. M. M. Nath, F.R.C.S. (Eng.) D.L.O. and Dr. H. N. Roy, M.B.S. (Patna.)	
Some aspects of the Etiology of Carcinoma of the Larynx	20
Dr. S. N. Sharma, M.B. (Cal.), D.L.O. (Lond.), F.R.C.S. (Edin.)	
Section of Chorda Tympanii Nerve for Tinnitus	26
Dr. R. A. F. Cooper.	
Management of Carcinoma of the Sinuses	28
Dr. A. F. Desmond.	
Uncommon causes of Nasal obstruction	36
Dr. S. Jain.	
Association Notes	44

NOTICE TO CONTRIBUTORS

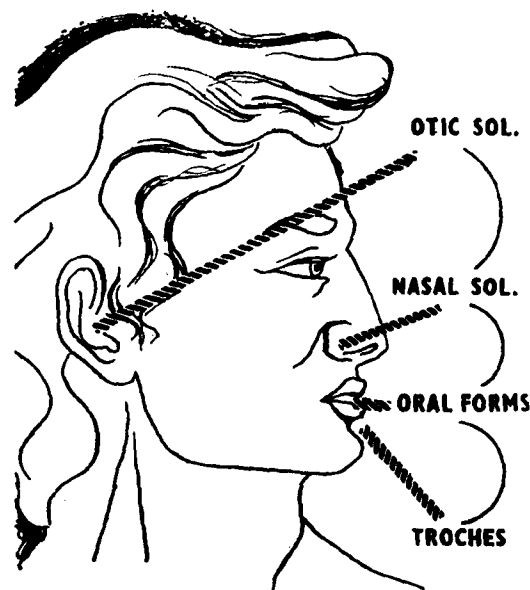
1. Original Articles are accepted on the condition that they have not been published elsewhere.
2. Manuscripts should be typewritten, on one side only of the paper and well spaced.
3. Orders for reprints should be sent along with the articles.
4. Editorial communications may be addressed to Editor, Indian Journal of Otolaryngology, Lempert Hospital, 1-A, Marshall's Road, Egmore, Madras-8.



Terramycin[®]

brand of oxytetracycline

in diseases of
EAR, NOSE & THROAT.



Both oral and topical forms of Terramycin have given excellent results in a number of conditions often seen in the field of otolaryngology. This pure, well tolerated antibiotic is markedly effective against the wide range of organisms responsible for these conditions. Successful clinical experience^{1, 2, 3, 4} in the treatment of Otitis Media, Otomastoiditis, Sinusitis, Tonsillitis, Pharyngitis and other conditions of otolaryngology recommend the selection of Terramycin.

- 1 Arslan, M. and de Vido, G.: *Athena*, 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.



World's Largest Producer of Antibiotics

VITAMIN-MINERAL FORMULATIONS
HORMONES

TRADEMARK OF CHAS. PFIZER & CO., INC.

PFIZER EASTERN CORPORATION, New York

Exclusive Distributors in India:

RAVISON PHARMACEUTICALS LTD; P.O. Bag. 10020 Bombay 1. 'Grams: RAVIPHARM'

BOMBAY SURGICAL COMPANY

Suppliers of

DIAGNOSTIC & SURGICAL INSTRUMENTS, HOSPITAL
EQUIPMENT & SUPPLIES DEFORMITY APPLIANCES

★

STILLE'S

Stainless Steel
Instruments

D & G
SUTURES

★

Original

KRUPP V2A

Rustless Steel Hypo-
Needles

BARD-PARKER

KNIFE HANDLES & RIB-BACK BLADES

New Charni Road

::

BOMBAY-4

TOTALIN-B

PARENTERAL

VITAMIN B COMPLEX
New Formula

Each c.c. contains:-

Vitamin B1	...	...	30 mg.
Vitamin B2	...	...	3 mg.
Niacinamide	...	...	150 mg.
Pyridoxine Hcl.	...	...	2.5 mg.
Calcium Pantothenate	...	...	2.5 mg.
Choline Chloride	...	...	15 mg.
Inositol	...	...	10 mg.
Benzyl Alcohol	...	...	1%
Phenol (as preservative)	...	...	0.5%

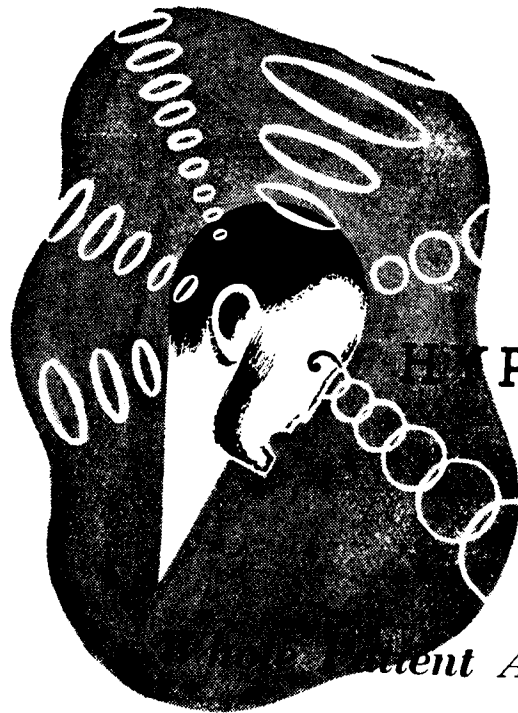
OLD FORMULA			
Vitamin B1	...	...	30 mg.
Vitamin B2	...	...	3 mg.
Niacinamide	...	...	150 mg.
Pyridoxine Hcl.	...	...	2.5 mg.
Calcium Pantothenate	...	...	2.5 mg.
Choline Chloride	...	...	15 mg.
Inositol	...	...	10 mg.
Benzyl Alcohol	...	...	1%
Phenol (as preservative)	...	...	0.5%

Cipla

BOMBAY-4

TOTALIN-B REPRESENTS HIGHEST
CONCENTRATION B COMPLEX

SUPPLIED IN RUBBER CAPPED VIAL OF 10 c.c.



HYPERTENSION

PERTENAL Approach

PERTENAL not only tends to lower the blood pressure, but also aims at controlling as many as possible of the irritating psychic and somatic stimuli, which are known to raise the blood pressure or maintain the hypertensive state.

COMPOSITION Tablets containing

Veratrum Viride extract, equivalent to total alkaloids of veratrum viride 1.25 mg.

Helps to lower arterial pressure without changing cardiac output.

Mannitol hexanitrate 30 mg.

Induces vasodilation.

Phenobarbital 15 mg.

Safe and effective sedative.

Homatropine methylbromide 2.5 mg.

Provides relief from spasm of the gastro-intestinal tract.

PERTENAL
TRADE MARK

PACKING Bottle of 50 tablets



THE CROOKES LABORATORIES LIMITED (Incorporated in England)
COURT HOUSE - CARNAC ROAD - BOMBAY-2

CS-5

Indian Journal OF OTOLARYNGOLOGY

Vol. VIII, No. 1

MARCH 1956

OFFICIAL SCIENTIFIC JOURNAL OF THE ASSOCIATION OF OTOLARYNGOLOGISTS OF INDIA

The Transpalatal Surgical Approach for removal of Nasopharyngeal Fibromata

BY

Dr. R. N. MISRA, M.S., D.L.O. (LOND.)

AND

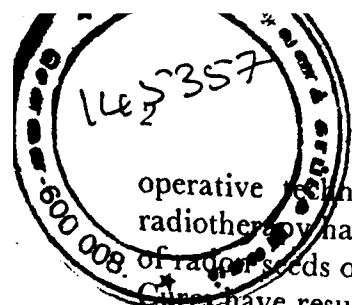
Dr. D. S. SHARDANA, M.S. (E. N. T.)

K. G. Medical College, Lucknow.

It is not evident why a general belief has come into being that these growths regress when sexual maturity is reached at 20—25 years (Mastin). Haudousa, Figi and Davis (1950) have not noticed any spontaneous regression and neither have we. Majority of the cases are either cured, or die of haemorrhages or have had treatment before this age is reached. Moreover, if one waits for them to disappear spontaneously they may involve the paranasal sinuses, pterygomaxillary space, orbit and even the cranium. Further undue delay in operating upon a good risk case may convert it into a poor risk due to recurrent haemorrhages and sepsis.

There are 3 types of treatment available (i) Radiotherapy ; (ii) Electrocoagulation ; (iii) Surgical excision.

Had the surgical approach been easy the superiority of a complete surgical excision could not have been challenged by the other forms of treatment but unfortunately the present day



Misra & Shardana

operative techniques do not provide the ideal treatment. Hence radiotherapy has been used in various forms, viz. implantation of radon seeds or radium needles, surface radium or deep rays. Cures have resulted from the radiotherapy alone but it has been usually combined with surgery. Dryness of nasopharynx, atrophy of maxillae and bony necrosis are real dangers. Hayes Martin (as quoted by Martin) has suggested limiting the use of radiotherapy in patients above 18 years on account of its possible effect on the growth centres of facial bones. It is difficult to assess the value of radiotherapy in the treatment of these tumors since it is quite useful in treating the smaller growths which can also be removed successfully by surgical means without endangering the patient's life, and on the other hand, it is useless in eradicating the larger growths which have to be treated by major surgical procedures inevitably. Our experience with deep-rays has been disappointing in treating nasopharyngeal fibromas which are usually received in advanced stages, their place probably still lies as a preoperative measure to reduce bleeding, as a post-operative measure in destroying the remnants as well as the surgically inaccessible extensions. Moreover radiotherapy has to be given over long periods varying from 12--18 months and in case of failure makes the surgical excision a difficult problem due to the formation of adhesions.

We can recall to memory only two cases whose tumors completely disappeared by radium treatment but dryness and mild epistaxis persisted for as long as 15 years in one patient. But the patient with the smaller growth has been free from any recurrence or troublesome sequelae except a persistent nasal twang in his speech.

Diathermy coagulation, a very close rival, has also the disadvantage of taking 10--18 months to cure the growths. It may eradicate the tumor at a single sitting but profuse haemorrhage is frequent which may defeat its own ends and in a few cases post-nasal plugging and even carotid ligature may become essential. There is no mortality and a complete cure results (Figs, 1940).

5 L
L183:402, N49 OT

Transpalatal Surgical Approach—Nasopharyngeal Fibromata 3

In spite of the advantages claimed for radiotherapy and electrocoagulation, surgical operations are necessary to gain access to the growth for the application of these methods as well as for the removal of the growths which have failed to respond to conservative treatment. Surgery still provides a quite and complete cure.

The soft palate hangs like a curtain in front of the nasopharynx, hiding from view its normal anatomy and making it difficult to unravel the pathological conditions arising therefrom. Even local anaesthesia may not prevent gagging and hence not allow a posterior rhinoscopic examination. Soft palate retractors, lighted retractors, Yankauers' nasopharyngoscope and even digital palpation may not give us a true picture of what lies behind the "iron curtain", Soft palate is again the main hurdle in the surgical approach to the nasopharynx.

Wilson while reviewing the development of surgical approach to a nasopharynx writes that in 1853 Michaux described lateral rhinotomy. Since then many more operations have been described mainly through these approaches.

(a) **Through the nose.**—Shrink the mucosa. Turbinates may be fractured outwards or removed. Adequate for small growths. Interferes with normal physiology. Rouge and Halstead made a sublabial incision from one canine fossa to the other canine fossa. Alae nasi elevated from the bone and nasal septum, divided or partially removed. Langenbeck and Ollier used incisions on the face with the turning aside of part or whole of the soft tissues. There is marked postoperative scarring. They give good access to the front of the nose but a very poor approach to nasopharynx and are obsolete.

(b) **Through the upper jaw.**—This approach may be subdivided into two methods—(i) Incision through face, and (ii) Incision through alveolar sulcus.

(i) Langenbeck's operation of turning the nose laterally was modified by Eve and later by Watson Cheyne, using a

NS6. 8. 1-2

partial excision of the upper jaw, but the best known method is that of Moures' lateral rhinotomy. Weber divided the upper lip and turned the cheek flap to gain more access.

(ii) The only useful sublabial approach is Denker's extended operation in which the anterior wall of the maxilla, portions of nasal bones and frontal process of maxilla are removed and also antro-nasal wall.

None of these operations is useful for removing a nasopharyngeal growth since the line of approach is directed too high.

(c) **Oral and Palatal approaches.**—These have been made mainly by antero posterior incision of soft and hard palate by Doyle, Moure, Delia, Escat and Nelaton. Simple longitudinal splitting of soft palate is not worth the trouble for want of adequate exposure.

A straight incision commencing behind the alveolus but stopping short at the base of the uvula exposes the undersurface of hard palate, portion of which along with part of posterior portion of the nasal septum may be removed giving adequate exposure of the base of nasal septum. Though the only useful approach mentioned as yet above, it suffers from the disadvantages of retraction of flaps while the exposure of nasopharynx is not adequate. Palate was split transversely by Ruddy in 1945 (Martin) to reach the posterior choana in cases of atresia. Wilfred Hymes, a plastic surgeon in Sheffield also split the palate while repairing cleft palates. A little later in the years 1948-49 while removing a mixed salivary growth arising from the lateral wall of the nasopharynx, Wilson used transverse splitting of the palate and struck upon the idea of approaching nasopharyngeal fibromas through this route (1951).

David White (1955) condemns the transpalatal approach because a perforation is difficult to heal. As the transalveolar, transantral and lateral rhinotomy approaches frequently have deformities he has described a method of combined intranasal

and postnasal approach. A Levin rubber tube size 12 is passed through the affected nostril. It carries a thread which is tied to the mid point of a U shaped loop of snare wire with 8" long arms. On pulling into the oropharynx the loop is made to engage the tumor. The two ends of the snare wire projecting through anterior nares are threaded over by an insulated metallic tube which is carefully pushed down to the posterior choana. The wire ends projecting through the metal tube are twisted with a haemostat so as to grip the growth firmly. The tumor now lies between the wire loop and the opening of the insulated metal tube at the choanal opening. Now a cautery point is applied to the same wire where it is being rasped by the haemostat and a cutting current of 35·40 m.a. is passed. On pulling upon the haemostat the tumor is dissected off its base. The loop is firmly pulled until it is delivered through the metal tube, just as in an ordinary polypectomy snare. Tumor is removed through the mouth and the nasopharynx inspected for remnants which can be bitten off. Bleeding points can be isolated and coagulated. If it still persists postnasal plugs for two days will be adequate. Ligation of major arteries was not required. This ingenious method may be good for small growths only.

Investigations.—1. Biopsy. Opinion is divided. Some surgeons believe that clinical history and physical findings are diagnostic. Others do not feel satisfied without a histological diagnosis. Figi and Davis are opposed to biopsy unless the degree of activity suggests malignancy.

2. Hb should not be below 50%. Haemorrhage makes the operation much more dangerous than the growth itself. Hence arrange for adequate blood transfusion. In most of the patients we have used 300 cc. of whole blood.

3. X-Ray may reveal involvement of antra, ethmoids, widening of orbital fissures and sphenoidal sinuses may be involved. Also helps to assess the extent of growth (Martin).

Technique :— Patient may sit up or lie down in Rose's position. Nasotracheal or orotracheal anaesthesia is used with the larynx packed off. Boyle Davis mouth gag is used. Tonsil position is not suitable for adults as the head cannot be sufficiently extended. Area between head and soft palate and between tonsils and pterygomandibular raphe is infiltrated with novocaine and adrenaline.

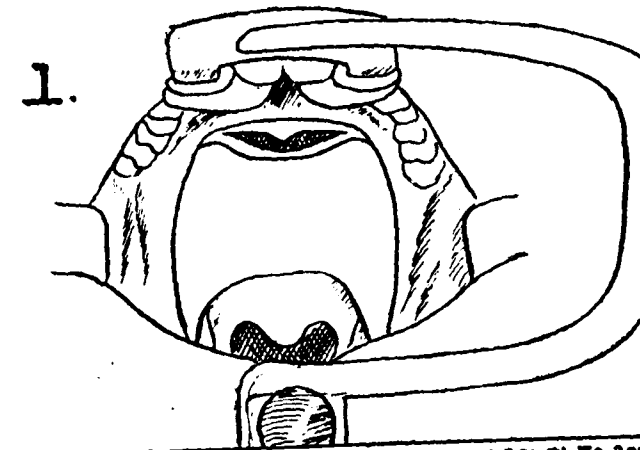
Incision starts as a transverse one just in front of the posterior border of hard palate and somewhat convex forwards. The edge of bone can be accurately defined by puncturing with a needle. The incision goes right down to the bone and the mucosa is separated backwards with a sharp raspator until the edge is reached. The posterior spine of the hard palate is then removed with a gouge or chisel and the nasopharynx opened by dividing upper surface of soft palate at its junction with hard palate. The incision is extended laterally till pterygomandibular raphe is reached and then proceeds downwards along this ligament for as far as may be desired.

The hamulus is identified by the finger and the tendon of tensor palati is seen passing across it. It is divided just medial to the hamulus. Now the soft palate is retracted and the mucosa of lateral nasopharyngeal wall is divided as far as required. Retractor is discarded and soft palate pushed back to the epilaryngeal pack. Bleeding is not very severe and is mostly from branches of posterior palatine artery.

Posterior edge of nasal septum, turbinates and Eustachian Tube are easily seen.

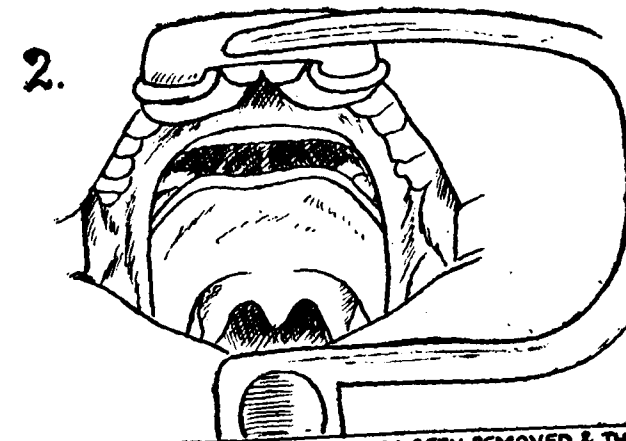
After removal of the growth, soft palate, is replaced and sutured by 3 or 5 sutures to the mucosa of the hard palate. No attempt is made to suture the upper surface and no attempt is made to close the lateral parts of the incision which do not gape.

No special post operative disability. Patient can talk or swallow quite normally and has no pain.



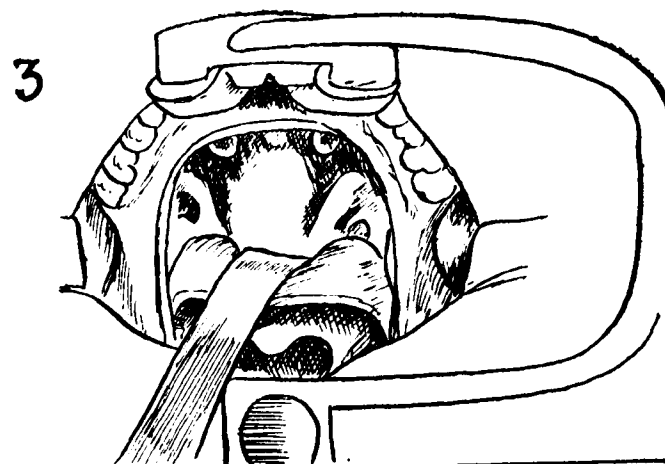
1. THE LINE OF INCISION THE TRANSVERSE PART HAS GONE DOWN TO BONE WHICH HAS BEEN EXPOSED & THE NASOPHARYNX OPENED BY DIVISION OF MUCOSA OF UPPER SURFACE OF THE PALATE AT EDGE OF BONE.

After C.P. Wilson.



2. POSTERIOR SPINE OF HARD PALATE HAS BEEN REMOVED & THE INCISION EXTENDED Laterally. THE HAMULUS OF INTERNAL PTERYGOID PLATE & TENDONS OF TENSOR PALATI MUSCLE ARE JUST APPEARING AT THE EXTREME EDGE OF THE INCISION.

After C.P. Wilson



THE INCISION HAS BEEN COMPLETED & THE WHOLE SOFT PALATE PUSHED DOWNWARDS & BACKWARDS. THE POSTERIOR BORDER OF NASAL SEPTUM, THE FOSSAE OF ROSENMULLER & THE EUSTACHIAN & ORIFICES ARE ALL CLEARLY SEEN. After C. P. Wilson.

Above technique can be combined with a longitudinal incision extending forwards from midpoint of transverse incision. By raising lateral flaps of mucoperiosteum from the hard palate, a portion of latter can be removed. Submucous resection of the posterior part of the nasal septum can now be carried out and the whole of the basisphenoid exposed. This might prove a useful approach for the pituitary. Martin has utilised the best method for making a permanent window in the hard palate (Palatal fenestration) to inspect and treat the recurrences. Dental obturator necessary.

Modifications.—Mr. J. C. Hogg has used the right lateral position recommended years ago by Sir Henry Butlin for the tonsil operation. Mr. Wilson, however, feels he would find it difficult to suture the palate in this position.

Disadvantages.—The central part of the incision may not heal leaving a palatal perforation which ultimately heals up. In anterior nasal extensions it has to be combined with other more suitable techniques.

Handousa believes splitting of palate involves lot of time for repair and still results in poor repair. They prefer transoral route combined with lateral rhinotomy. Danker's approach, according to him, is no better than simple dilatation of anterior nares, unless a considerable portion of the septum is also removed.

Case I.—R. D. aged 18 years, male, farmer, admitted on 1—10—52. Discharged on 16—1—53 as cured. Admitted with complaints of epistaxis, nasal obstruction and nasal voice of 10 months duration. He had got it unsuccessfully removed four times at some other hospital.

Local Examination.—A firm globular swelling occupying the whole of the nasopharynx but not extending into the lateral recesses.

Investigations.—Blood Hb. 44%. (6.6 gm.) T.B.C. 2.9 m.

Biopsy.—8—11—52. Section showed dense fibrous tissue. No covering epithelium anywhere. In the fibrous mass there were dilated and irregular spaces seen lined with a single layer of endothelium. Most of the spaces were empty but some contained pink staining material. Diagnosis—Lymphangiofibroma. 11—12—52. Biopsy repeated. Section showed similar structure. The spaces did not show any red blood corpuscles. No epithelial lining or any glandular elements were seen in the piece. Diagnosis Lymphangiofibroma.

Treatment.—Had a course of deep-rays (3 exposures upto 8/12). 8—12—52. Operated by splitting the palate and growth removed. Recovery uneventful.

Case II.—S.B.S. aged 22 years, male, farmer, admitted on 19—11—52. Discharged on 3—2—53. Complained of epistaxis and nasal obstruction since two years. Local examination revealed a lobulated firm growth in the nasopharynx extending into the right nostril.

Investigations.—R.B.C. 4.37m. Hb. 90%. 16—12—52. Operated. Transpalatal approach. Tumor mostly intranasal. Portion projecting into nasopharynx removed with raspatory. Nose wound packed with spongostan. 300 cc. blood during operation. 10—1—53 - Operated. Caldwell Luc (rt. side) done. Bony wall thick but mucosa not hypertrophied and no growth found inside the antrum. Therefore remaining growth in the nasal cavity removed through intranasal route and sent for biopsy. Postnasal plug given. 22—1—53. Deep-rays daily—six exposures given. Discharged as cured on 3—2—53.

Case III.—M.C. aged 25 years, male, admitted 3—6—53. Discharged 9—7—53. Complained of epistaxis, nasal obstruction on right side since 2½ years and loss of weight since 1 year. Local examination revealed a firm lobulated fleshy mass in the nasopharynx.

Investigations.—Bleeding time 2 mm. Coagulation time 3 mins. 30 seconds. Hb. 100% R.B.C. 4 million. 10—6—53 - Operated.

Postnasal plug of spongostan applied. 325 cc. blood given during operation 1—7—53. Central portion of the wound not healed leaving a perforation ½" × ¼" with slowly healing margins. Edge cauterised with silver nitrate 20% solution 9—7—53. Perforation almost healed.

Case IV.—K. N., aged 14 years, male, admitted 11—2—54. Discharged 12—3—54. Complained of epistaxis, 7 days, and nasal voice 2½ months. O.E. Soft palate bulging and immovable. Firm smooth mass on palpation.

Investigations.—W.B.C. 9200. Polys 43, Lymphos 32, Eosinos 25, Hb. 66%. 26—2—54 - Biopsy Section shows interlacing collagenous fibrous tissue and a number of blood vessels covered on outer aspect by stratified squamous epithelium tumor tissue infiltrated with chronic inflammatory cells viz., lymphocytes and plasma cells. Diagnosis-fibroma. 19—2—54 Operation-Junction of hard and soft palate infiltrated with adrenaline saline solution. Growth 2" × 1½" × 1½" removed.

Postnasal plugging with spongostan. Postoperatively central part of wound broke down leaving a perforation which gradually healed up with chemical cautery.

Case V.—R. B. S. aged 16 years, male, student, admitted 7—3—55. Discharged 29—3—55. Complained of epistaxis since 2 years and nasal obstruction 6 months.

O. E.—A pinkish irregular growth was seen in the floor of the left nostril posteriorly. Did not bleed on touching. In the oropharynx a pinkish lobulated growth seen below the uvula. On palpation found it to be firm and occupying the whole nasopharynx.

Investigations.—W. B. C. 8600 - Polys 58% Lymphos 32% Eosinophils 10% R.B.C. 4.4 m. Hb. 87% Bleeding time - 3 min. coagulation time 2 min. 17—3—55 Biopsy: Section shows elongated cells separated by bundles of collagenous tissue, Cells have oval nuclei and scanty eosinophilic cytoplasm. Tumor

covered by a layer of stratified squamous epithelium. Diagnosis - Fibroma. 15—3—55. Operation—Tumor base attached to basi-sphenoid. Intranasal feeding instituted. Postnasal plug kept in place.

Case VI.—L aged 16 years, male, farmer, admitted 7—9—55. Discharged 30—9—55. Complained of epistaxis 1½ years and blockage of nose and mouth breathing and snoring and nasal voice since 5—6 months and dysphagia 3 months.

O. E.—Mucopurulent discharge in both nostrils covering a fleshy growth obstructing both the nostrils.

Nasopharynx showed a growth which bulged the soft palate and interfered with its movements. Firm on palpation. Movable slightly from side to side. Did not bleed on touch.

Investigations.—Hb. 50%. W.B.C. 11,400. Polys 52%. Lymphos 27%. Eosino 21%. X-Ray paranasal sinuses clear. 15—9—55 Biopsy-Tissue partly lined by stratified squamous epithelium underlying fibrous tissue, shows a number of vascular spaces lined by endothelium. Fibroangiomatous Polypus. 15—9—55 - Operated. 325 cc. blood given during operation. After a few hours one bottle of plasma and 325 cc. blood given. On the 6th postoperative day patient was able to take semi-solid food.

Case VII.—Shamsuddin, 19 years, male, businessman, admitted on 19—9—55, complains of frequent epistaxis, snoring, nasal blockage and mouth breathing for the last one year, and difficulty in swallowing and hard of hearing for the last six months. He got himself operated at some other hospital six days earlier unsuccessfully.

O. E.—Both nostrils totally blocked. Soft swelling over the left cheek. Nose full of mucopurulent secretion. Left nostril showed a firm growth posteriorly. Soft palate pushed forward. Nasopharynx revealed a firm lobulated growth occupying the space completely and also embedding into the left lateral pharyngeal recess.

Investigations.—Total W.B.C. 13,600. Polys 77% Lymphos 23% Hb. 58%. Biopsy done after operation confirmed the diagnosis of angiofibroma. 27—10—55. After treating the patient with liver extract and iron mixture transpalatal approach was used. There was slow oozing of blood during the operation. Growth easily separated from its base by twisting it, but its extension into the left lateral pharyngeal recess was left over which was removed later. The growth was found to arise from the basi-sphenoid. Postnasal plug kept at site for 24 hours. No post-operative complication except that the central part of the wound broke down (operation by D.S.S.) Progressing satisfactorily.

Transpalatal approach has been used since 1953 in this department and 8 cases operated by Wilson's transpalatal technique are reported below. Previous to this, removal *via pars naturales* combined with transoral and transantral approaches and lateral rhinotomy was practised.

IMPRESSIONS

1. Haemorrhage is not minimised.
2. For small growths removal *via pars naturales* is more desirable as it avoids splitting the palate and fracturing the hamulus and the formation of a perforation due to the breaking down of the suture line in the centre. If separation is carried out through the line of cleavage bleeding is minimum.
3. For growths of bigger size there is no doubt that a very good exposure is afforded and removal can be carried out under direct vision which really is the greatest advantage of this method.
4. This method, or for that matter any other transpalatal approach cannot deal with extensions into the antra or other paranasal sinuses but we have observed its extension into the Eustachian tube and this approach gives an adequate exposure for its removal from this region.

5. Perforation left in the central part of the wound heals up within a couple of weeks. No difficulty in swallowing or speech persists. Obturator was not required in any case.

6. Healing of the split soft palate in the central portion is rarely by first intention in spite of the long time that the soft palate repair takes. Central portion of the suture line breaks down practically in every case to be filled up by granulation tissue later on.

MODIFICATIONS SUGGESTED

1. Hamulus may not be broken.
2. In small growths about the size of a walnut ($\frac{3}{4}$ " in diameter) it may be possible to limit the incision to one half of the soft palate.
3. Line of incision may have to be placed more anteriorly on the hard palate specially when the tumor is of a large size and is pushing forward the soft palate to a considerable extent. This is done also to avoid cutting through the growth itself with the knife while making the incision and avoid sharp haemorrhage.
4. Kilner's mouth gag is more useful than Boyle Davis mouth gag since it allows the intratracheal tube to be kept out of the way without compressing it.
5. Though diathermy knife cannot be used for fear of delaying healing, the bleeding points can be coagulated.

SUMMARY

1. The advantages and disadvantages of surgical treatment radiotherapy and electrocoagulation are put up.
2. A review of the development of the surgical approach to nasopharynx is given.

3. Technique of transpalatal approach is described and illustrated.

4. Seven cases have been reported.

5. Our own impressions are given at the end and certain modifications that have been practised by us, have been suggested.

REFERENCES.

1. David White, Archives of Otolaryngology - 1955 March, Surgical removal of Benign Nasopharyngeal tumors.
2. Figi and Davis, Vol. 64: 1950, Extracted from Laryngoscope 1950, LX. 99, Management of Nasopharyngeal fibromas.
3. Handousa, Jol. 1954; 68: 647 Nasopharyngeal Fibromas.
4. Martin, J. S., Jol. 1954: 68: 39 Nasopharyngeal fibroma and its treatment.
5. Wilson, Jol. 1951: 65: 738 Approach to Nasopharynx.

Otitis Externa Granulosa

BY

Dr. M. M. NATH, F.R.C.S., (ENG.) D.L.O.

AND

Dr. H. N. ROY, M.B.B.S., (PATNA),

Tata Main Hospital, Jamshedpur.

Three years ago, three cases with granulation in the external auditory meatus presented themselves on a single day at the Out-patient Department to provoke the curiosity and a subsequent inquiry which lead to writing the present paper.

The patient presents himself with a discharging ear and history of blood stain over the swab every time he attempted to clean his ear before instilling a house-hold remedy or the ear drops prescribed by his family doctor. He came to the hospital E. N. T. Section when one of his friends noticed a fleshy growth in the ear and his family doctor proclaimed it to be an ear polyp. It turned out to be nothing of the sort. The drum was entire and the granulations had their origin in one of the walls of the external auditory meatus or even the margin or the surface of the drum. At this stage it would not be out of place to define an aural polyp. It is an E. N. T. pathological entity—a mass of granulation tissue which is covered by flattened epithelium and takes its origin from one of the walls of the middle ear in the presence of chronic middle ear infection. It usually has a pedicle and can be easily twisted out if the aurist knows how. It appears that the condition under review is not very commonly met with, because there is hardly a mention of it in the text books. A few short contributions have been made in the literature by British workers while they were in India during their army service but no Indian worker so far has recorded his study and expressed his opinion on the subject of this condition which is not very uncommon in our country.

Moffett (1943) described and illustrated cases of “granulating myringitis” but discovered no concomitant diffuse inflammation of the external auditory meatus. He was inclined to maintain the identity of the condition he observed and named, though he also stated that granulations occurred associated with various types of otitis Externa.

Otitis Externa Granulosa

17

Clark (1946) reported “A sessile plaque attached to the outer surface of the drum head itself or small pedunculated masses arising from meatal walls”.

Johnston (1948) made a mention of the condition in his paper dealing with aural conditions as managed in an industrial area.

Punt (1949) while working in Australia and North Italy saw this condition during hot weather and so was inclined to think that swimming had an aetiological significance.

Our series is made up of 35 cases over a period of three years. In this series cases of granulations with middle ear infection—Parotid Fistula—Furunculosis, new growths and Dermatological conditions concerning the pinna are excluded. Culture of the organisms was obtained and sections of the tissue removed was done in an attempt to co-relate the type of the organism with the production of granulation tissue.

Sex distribution is almost equal. There were 17 males and 18 females.

Age groups — 1 — 10 years	...	21
11 — 20 „	...	10
21 — 30 „	...	2
31 — 40 „	...	2

There was one constant factor—the presence of a foreign body either in the form of wax or extraneous material introduced by the child which was present without exception.

Organisms isolated were staphylococcus aureus and Albus B. Coli, Pyocyaneus—Proteus Vulgaris, diphtheroids and only in one case streptococcus haemolyticus. About half the cases showed pure cultures while a little more of them were mixed. Staphylococcus predominated—79% of all cases. It was formerly believed that cerumen has bactericidal properties—actually it is a good culture medium Granulation tissue reported was both acute and chronic variety with fibrosis. In two cases Eosinophils and plasma cells respectively were seen.

Mollison (1949) described indolent ulceration of external auditory meatus with bare bone and granulations but very little discharge. All his cases belonged to upper age group. No bare bone was observed in our series—granulations just filled the meatus. Deep to the granulations was the wax and occasionally a foreign body.

It is known that the fungus infection involves the stratum corneum, the streptococcus the dermis, and staphylococcus the hair follicles and ceruminous glands. Our observations confirm the above view. There is very little dermis in the external auditory meatus; so the streptococcus is at a handicap and the granulations don't rise from stratum corneum. So the fungus infections had no place. Staphylococcus was most predominant of the lot.

On examination—There are granulations originating from one of the walls of the external auditory meatus which are friable, bathed in purulent discharge which is devoid of mucus to announce the lack of connection with middle ear. The discharge has a peculiar foul smell. On an attempt at cleaning, the presence of wax behind the granulations is soon evident because it is already thinned out in consistency due to the mixture with the purulent discharge. The foul smell, in our opinion, is also due to this mixture. The wax is the predominant smell. Normally one does not notice it because it is more or less solid when removed from a healthy ear. The deafness is conductive in type and lasts only till the meatus is not cleaned. Pain in the ear is always quite insignificant in this condition.

Diagnosis in most cases is not established on first sight because the presence of the entire drum without perforation has to be established. This entails careful cleaning, which incidentally forms part of the treatment. At times the granulations have first to be removed before one can clean the inner part of the external auditory meatus. A little at a time is attempted as to clean an ulcerated surface means pain. Siegel's speculum is an essential equipment. The condition can easily be confused with an old time *aural polyp* or the granulations pouting from the

posterior or attic perforation of the drum—an *atypical furuncle* which has burst producing very little discharge. It however always starts with acute pain from the very beginning—a *parotid fistula* in the anterior wall which sometimes puts forth granulations but also produces copious amount of discharge with pressure on the parotid gland—*Exostosis* in the meatus can always be excluded by just a touch with the probe. One of our cases turned out to be a *syringo cystadenoma*—a simple tumour of sudoriferous glands.

The condition is liable to recur as Mollison pointed out. In our series only once case recurred, a child who reintroduced a small stone foreign body.

Treatment is very simple indeed—cleaning up the external auditory meatus is all that is required after removing the granulations. Some people remove these with the help of crocodile forceps at a few sittings. We remove them by means of a small curette and clean the ear also by dry mopping at one go under a small general anaesthetic. This saves prolonged painful treatment for the lower age group patients. The ear is subsequently cleaned and dressed with argyrol wicks on two or three occasions. Occasionally touching the little stumps of granulations with 50% silver nitrate helps to clear up the condition gradually.

Conclusion:—Otitis Externa Granulosa is not a very uncommon condition seen in our country. The condition is associated with accumulation of wax prior to the infection of the lining of the external auditory meatus. The foul smell is due mainly to the wax forming a solution in the purulent discharge. It is recommended that the granulations be removed by a careful curettage and the ear cleaned by dry mopping on a single attempt with patient under general anaesthesia.

REFERENCES.

1. Moffett, A. J. (1943)—J. Laryngology 58, 453.
2. Clark, J. V. (1946)—J. Laryngology 61, 586.
3. Johnston, C. M. (1948)—B. M. J. 2, 1049.
4. Punt, N. A. (1949)—B. M. J. 1, 989.
5. Mollison, W. M. (1949)—J. Laryngology 63, 85.

Some aspects of the Etiology of Carcinoma of the Larynx

BY

Dr. S. N. SHARMA, M.B. (CAL.), D.L.O. (LOND.), F.R.C.S. (EDIN.)

That the incidence of Cancer of the Larynx is very high in Assam, was first brought to the notice of the Medical Profession, in the Second All Assam Medical Conference of the Indian Medical Association held at Jorhat on 26th-27th October, 1950 by my article "The problem of Cancer in Assam with special reference to Cancer Larynx" published in the journal of I. M. A., Vol. XX, No. 11, August 1951. Subsequently this was brought to the notice of the Association of Otolaryngologists of India in the December, 1951, Conference, held at Calcutta, which was published in the journal of the Association, Vol. II, No. 3, September, 1952, and the other article in the June 1953 issue, Vol. V, No. 2. Each has confirmed the previous findings. Lastly on 31-3-53, this matter was taken up with Dr. V. R. Khanolkar, the Director of Cancer Research, India, who visited our Assam Medical College, and saw the cases and the Department and verified the figures. Along with him another analysis was done, which definitely showed that Cancer of the Larynx was predominant in Assam—210 being of Larynx out of 311 Cancer cases, more in Assamese people and mostly extrinsic type. (*Vide* I. C. M. R.—scheme submitted in 1953). He has mentioned about this high predominance as that of the hypopharynx in Assam, in their article on Smoking and chewing of Tobacco in Relation to Cancer of the upper alimentary Tract by Dr. Sanghvi, Dr. Rao, and Dr. Khanolkar in May 7th 1955, issue of B. M. J.

It is because different authors, mention the site of Pyriform Sinuses as Hypopharynx, although Laryngologists call it Larynx, which causes a confusion, that I suggested in my article "On

Cancer Larynx" of June 1953 issue to adopt a standard classification by our Conference. This could help in accurate assessment.

In this same issue it was pointed out that the causative factors may be classed under 2 groups. (1) Carcinogenic agent from outside. (2) Something possibly endocrine in the body itself. The high incidence being of the Extrinsic variety, the Carcinogenic agent was suspected in the food habit as it was mainly in the food canal. The Betel nut lime and Tobacco, was suspected, because the betel nut in Assam is widely used by the Assamese people, and they have more irritant properties than those used elsewhere in India, and are used in different ways. It was also noted that Punjab having the least amount of this habit has got the lowest incidence and the parts of India in the South and East, where this habit is more rampant, the incidence is higher—the highest being in the Easternmost state of Assam, where the habit is more common and the Betel nut used is more strong and toxic.

The Betel nut.—In other parts of India, I am told, it is the "Supari" which is the mature Betel nut, dried after boiling in water which is commonly used. But in Assam, the types used are:—

- (1) Premature, raw.
- (2) Mature raw.
- (3) Mature, after keeping underground for a year or so.
- (4) Supari—mostly by the Non-Assamese people.

As such it is possible, that the Carcinogenic substances do not get a chance of being minimised, as it would happen, if kept under water for sometime, or it may be that keeping underground may make it stronger.

Character of the Local Betel nut.—Some of them are very irritant and toxic and this quality varies in product of different locality. It produces (i) dulling of the sensation of taste in the

tongue. (ii) Flushing of the face and head and heat and sweating all over the body. (iii) Giddiness and Vomiting. (iv) rawness and ulcer in the tongue and cheek. These are more marked in certain types and in people who are taking it newly. As such people coming from outside the state are afraid to take it. But those who start taking find it difficult to leave. Supari does not produce these symptoms.

As such this Betel nut was suspected to be a causative factor. When this was pointed out to Dr. Khanolkar he also agreed and gave me guidance in my plan for the survey work, to find out, as to whether, these suspicions were correct.

Under a grant from I. C. M. R. during 1954-'55, the enquiry into the Etiology of Cancer Larynx in Assam, with special reference to Assamese Betel nut chewing habit was carried on and two, half yearly reports one upto 30th September '54 and the other upto 31st March '55, have been submitted to I. C. M. R. and the former has been published in the Technical Report of the Scientific Advisory Board of the I. C. M. R. for the year 1954. From the result of this survey Conclusion has been drawn that the suspicion of Betel nut chewing habit being a cause is now a possibility and needs further confirmation by further survey and experiment. It has also been found that this habit is very common amongst the Assamese people, as will be seen from the following facts.

4000 unselected persons of all varieties, including patients relative above 20 years who came to the Assam Medical College were questioned about these habits.

Out of 238 Cancer cases from Lip to Oesophagus region, 230 were addicted to the Betel nut chewing habit and only 8 were non addicts. Out of this 238-186 were Assamese, of which 183 were addicted and only 3 were non-addicts and of the 52 Non-Assamese—47 were addicts and 5 non addicts.

The type of Betel nut used—203 Assamese type, 18 Non-Assamese type and 9 mixed.

A TABLE IS GIVEN BELOW FOR READY REFERENCE

Group	Race		Betel nut chewing Habit Racial distribution						Types of Betel nut			
			Addicted			Non-Addicted						
	Assamese	Non Assamese	Assamese	Non Assamese	Total	Assamese	Non Assamese	Total	Assamese	Non Assamese	Mixed	
Lip to Oesophagus. Group.	186	52	183	47	230	3	5	8	203	18	9	8
238												
Tumours of regions other than above mentioned.	52	32	30	17	47	22	15	37	38	9	X	37
84												
Non - Tumour Cases.	2495	1183	2056	850	2906	439	333	772	2335	541	30	772
3678												
Total ...	2733	1267	2269	914	3183	464	353	817	2576	568	39	817

Of the 4000 persons—2733 are Assamese, 1267 are Non-Assamese. Of 2733-Assamese—2269-are addicted and 1267 Non-Assamese 914 are addicted. That means 3183 persons are habituated which means that it is a very predominant habit in Assam. Amongst the non-addicts—464 are Assamese and 358 are Non-Assamese. That means percentage of non-addicts amongst Non-Assamese people is greater than in Assamese. Hence this Betel nut chewing habit is more common amongst Assamese people and the largest number of them are addicted to it. The type of Betel nut used—Of 2733 Assamese, 2576 use Assamese type; of 1267—Non-Assamese people, 568 use Assamese type and 39 use mixed.

Hence this analysis shows—that Betel nut chewing habit is very common in Assam, large number of Non-Assamese people also take to this Assamese type of Betel nut and that almost all the Cancer cases except 8 are addicts of which 3 are Assamese and 5 are Non-Assamese.

From this it will be seen that the conclusion drawn is quite legitimate and the suspicion of Betel nut chewing habit being a cause is a possibility.

In this connection it will be interesting to refer to the article published in B. M. J. May 7th 1955 by Dr. Sanghvi, Dr. Rao and Dr. Khanolkar, under the title "Smoking and chewing of Tobacco in relation to Cancer of the upper Alimentary tract".

Wherein they have said from their study at Bombay that the "Organ Distribution" of Cancer is often strikingly dissimilar in different groups of population, varies greatly from one country to another and differs in different communities in the same geographical region and that the communities investigated showed notable differences in habits, customs occupations and nutritional status. The result of the statistical analysis showed that the habit of chewing was associated with Cancer of the oral cavity; that the combined habit of smoking

and chewing was associated with Cancer of the Hypopharynx and base of the tongue; and that only smoking was associated with Cancer of the Oesophagus.

Hence the conclusion drawn already is supported by these analyses. But to make our figures exactly comparable will need further analysis. Nevertheless, the fact remains, in both these works, that Betel nut chewing is likely to be one of the contributory factors in production of Cancer of Larynx—Extrinsic type (said as Hypopharynx), although they are at two ends of India.

Further work in these lines in other states also would greatly help in finding out the exact facts, if this possibility is true or not. We are hoping to be able to extend this work in our state.

If this possibility could be finally confirmed, it is bound to have a tremendous effect in prevention of this fell disease in our country.

Since authorities and Govt. now give more importance to the preventive side of Medicine, these works should be spread all over the country as soon as possible to confirm or otherwise of this possibility.

I take this opportunity of expressing my deep gratitude to I. C. M. R., Dr. Khanolkar, and authorities of Assam Medical College for enabling me to have started this work in Assam.

Thanks are due to my Research Assistant Dr. D. P. Phukan, and others of the Department of E. N. T., who assisted in this work.

Section of Chorda Tympanii Nerve for Tinnitus

BY

Dr. R. A. F. COOPER (Bombay).

Tinnitus of unknown origin has always been a despair of all otologists. To the patients with this complaint life is intolerable. Its crippling effect in men and women of all ages is apparent. I am sure every otologist has come across patients with this complaint who are on the verge of suicide. All one used to do so far was to go on switching over from one bromide to another. Having come across Rosen's article as a last resource I thought of trying it out on some of my patients as I had nothing better to offer to them. To explain relief of symptoms following this operation Rosen suggests that afferent fibres of the chorda tympanii and nervus intermedius may be regarded functionally as a continuous nerve with their cells of origin in the geniculate ganglion. The nervus intermedius ascends from the geniculate ganglion and after sending a branch to the vestibular portion of the 8th nerve in the internal auditory canal, joins the tractus solitarius to end in the seventh sensory nucleus in close association with vestibular and cochlear nuclei. Afferent impulses passing up the Chorda Tympanii could thus stimulate the vestibular and cochlear nuclei centrally.

Quite a number of my cases of otosclerosis failed to be relieved of this symptom even after fenestration operation. After having come across this article, in cases of otosclerosis with pronounced tinnitus I started deliberately cutting the Chorda Tympanii nerve during fenestration operation. Of the first 8 cases six were totally relieved of this symptom—an improvement which they have maintained uptill now. Longest period till to-day being one year and nine months. Subsequently I pursued with this operation in cases of either Tinnitus alone or Tinnitus with deafness as in otosclerosis and where fenestration was not possible. I have operated nine such cases so far. In 3 cases Tympanosympathectomy was added to Rosen's operation.

Anaesthesia used was gas oxygen. A little novacaine with adrenaline was injected in external auditory canal over posterior half, right near the drum. A semicircular incision was made in

the skin over the bony canal wall about 6-7 mm. external to the drum commencing from 9-0 o'clock reaching 3-0 o'clock on right side and from 3-0 o'clock to 9-0 o'clock on the left. Part of the skin with the drum was folded upwards. Chorda Tympanii was exposed and sectioned. The drum membrane was restored to position. Cibazol powder was insufflated locally. Maximum hospitalisation was 48 hours. Prophylactically antibiotic was used for 4 days. Ear toilet was instituted every day for a week.

In all, 21 cases were subjected to treatment on this line. In first 8 cases chorda tympanii was severed during fenestration surgery. In next six cases chorda tympanii was sectioned through external route. In subsequent 4 cases Lempert's Tympanosympathectomy was done. Further, three cases were subjected to Chorda Tympanii section plus Tympanosympathectomy (Teasing the tympanic plexus). Of the 14 cases subjected to Chorda Tympanii section alone 11 improved and have so far maintained their improvement. Three cases either improved temporarily or did not improve at all (one of the cases was bilateral meniere's and bilateral section of the Chorda tympanii was done).

Out of four cases where only tympanosympathectomy was done, not one improved. All the three cases where both Chorda Tympanii section plus tympanosympathectomy were done derived total improvement. Out of 17 cases subjected to either section of the Chorda tympanii alone or along with tympanosympathectomy 14 improved. In most of the cases tinnitus either partially or totally disappeared in the evening of the operation day or latest before next evening. Total relief was within 24 hours. In all cases the wound healed up with first intention. No post-operative complication was noticed. Only in one case I was not sure of the section of the nerve and the tissue was thrown away otherwise in all cases the part of the nerve removed was submitted to microscopic examination. It is possible that some of my failures went to other hospitals but as far as possible I have tried to trace them. Having obtained a reasonable success I shall follow up this operation though I do not say we have reached the end of our efforts to relieve this most distressing symptom.

Desmond



Cases showing the palatal defect.



Management of Carcinoma of the Sinuses



A Case of Carcinoma of the left
Ethmoid and antrum three years
after operation.

Case of Carcinoma antrum after
operation.



Management of Carcinoma of the Sinuses

BY

Dr. A. F. DESMOND,
C. M. C. Hospital, Vellore.

Until the 1920's there was no satisfactory form of treatment for carcinoma of the sinuses. No one had more than one or two cures to his credit, in spite of the fact that all the operations described today were then in use. Moure described his operations in 1902. At that time radical excision was in vogue *via* Ferguson's, Langenbeck's, Diffenbach's or Kocker's incision; but apart from the poor results, these had an operative mortality of 30%. Moure's, Rouge's and other less radical procedures were therefore introduced and became popular. Surgery failed because in the majority of cases it was not possible to excise the surrounding one or two centimetres of apparently healthy tissue. Irradiation with X-rays or radium gave unsatisfactory results in most hands. Irradiation failed because the growth is within bony walls, and because many of these growths are resistant and even those which apparently disappear soon reappear.

It was not until irradiation combined with surgery and diathermy was used that results improved. This needs co-operation between the surgeon and the radiotherapist. Both must realise that the combination is essential. Evidence from the literature is overwhelmingly in favour of the combined treatment. Harmer, Ohngren, Gordon New, Grossman, Capps, Negus, Clarke, Cade to mention some are all in favour of it. We have been fortunate in that we have a radiologist who feels that the combined treatment is the only hope for the patient. Therefore it is essential that these cases be treated only in centres where adequate surgery, irradiation and diathermy are available.

Surgical approach:—Intranasal removal should never be done, it is mentioned only to be condemned. It is very tempting,



Cases of Carcinoma involving both maxillae.





An obturator without teeth.

especially after deep X-ray therapy to remove the shrunken growth intranasally; such treatment is sure to be followed by recurrence.

Moure's lateral rhinotomy.—Still a very popular operation, gives an excellent exposure of the sinuses, but it is felt today to be an inadequate operation and this has been my experience: inadequate because it is not radical enough and leaves the hard palate behind. There are two surgical approaches with which I have had some experience and which I feel are the best available. The first is the Harmer Holmgren approach *via* the alveolus and hard palate without any skin incision. The second approach is *via* a modified Ferguson incision. The former gives adequate exposure of the maxillary, ethmoid and sphenoid sinuses and is the routine approach, but for subcutaneous infiltration and extensive lesions the latter is used.

Surgical technique.—I believe an extensive excision is necessary. The hard palate on the affected side should be removed in every case. If the floor or lateral regions of the antrum are involved the whole of the hard palate on the affected side must be removed. If the attachment of the growth has not extended beyond the antro-ethmoid junction then the third molar can be left behind to facilitate prosthesis. The reasons for routine removal of the hard palate are as follows:

(a) It is part of the maxilla and once the maxilla has been infiltrated it is not possible to tell how far the malignant cells have extended.

(b) It is very difficult to care for the cavity through the anterior nares.

(c) It is much easier to detect and treat any recurrence through the palatal defect.

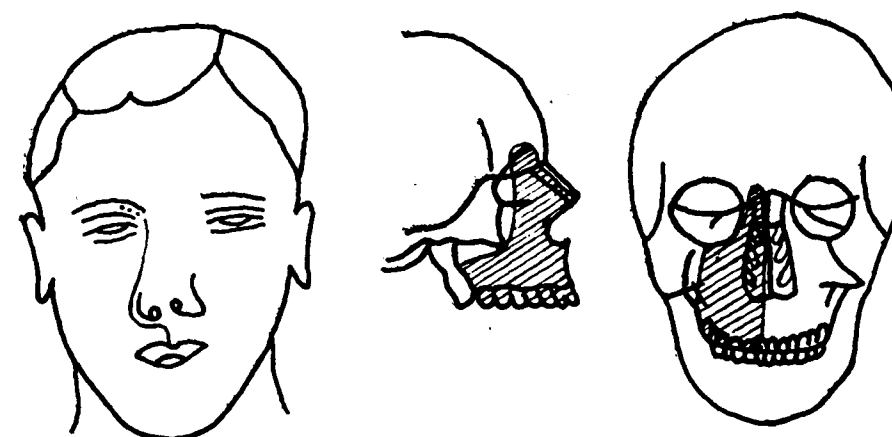
I also feel that the ethmoid sinuses should be cleared out in every case even if not clinically involved and the sphenoid should be explored. I have seen three cases in which only a

partial maxillectomy was performed and in whom recurrence in the ethmoid took place. It is safer to remove the medial wall and floor of the orbit. The general feeling is that removal of the floor of the orbit causes diplopia, but I have not seen it happen in any of the cases in which the floor has been removed. The reason for advocating this removal is because there is a view as stated above, that once a bone has been infiltrated by malignant cells it is not possible to tell how far they have extended, and therefore the whole bone should be removed, and my experience makes me feel that there is truth in this. If the orbital periosteum has not been infiltrated the eye need not be removed, but if it has been infiltrated the eye should be removed. If not removed in such cases a recurrence is almost certain in spite of diathermy and radium to the region.

It can therefore be seen that the operation is an extensive one involving practically a total maxillectomy and ethmoidectomy, and sometimes more than this. Bleeding is inclined to be profuse, and blood transfusion is essential; in only one case have we ligatured the external carotid, and that was in a bilateral maxillectomy. A rapidly performed operation cuts down the blood lost, and so prevents shock and aids recovery. These cases as a rule make a remarkably rapid recovery.

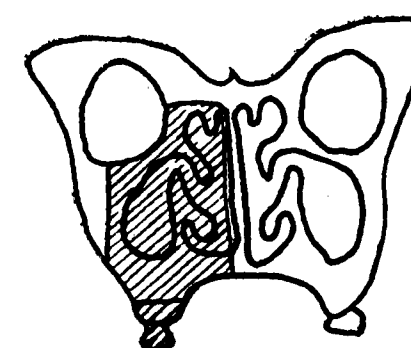
Operability.—In these cases one is frequently confronted with the problem of operability. It is only rarely that these cases are seen or diagnosed in time to be called early. Frequently there is a very short history, and the pathologists more often than not report anaplastic carcinoma, therefore technically inoperable. It has been said that if the subcutaneous tissues of the cheek have been infiltrated it means that the pterygo-maxillary fossa has been invaded and therefore the case is inoperable; inoperable in the sense that the chances of a cure are remote. But considerable palliation can be done for most cases. Very few cases should be turned away without treatment. Recently we operated on a man with bilateral maxillary carcinoma. If you do not operate, the tumour will just grow and

EXTENDED LATERAL RHINOTOMY WITH REMOVAL OF HARD PALATE

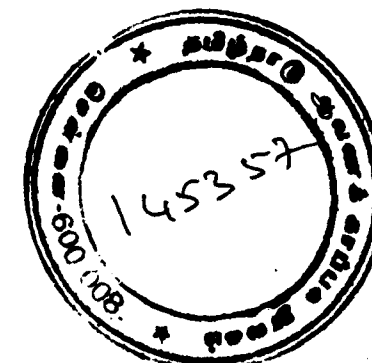


Modified Ferguson Incision — dotted lines indicate extension, if necessary.

The area removed.

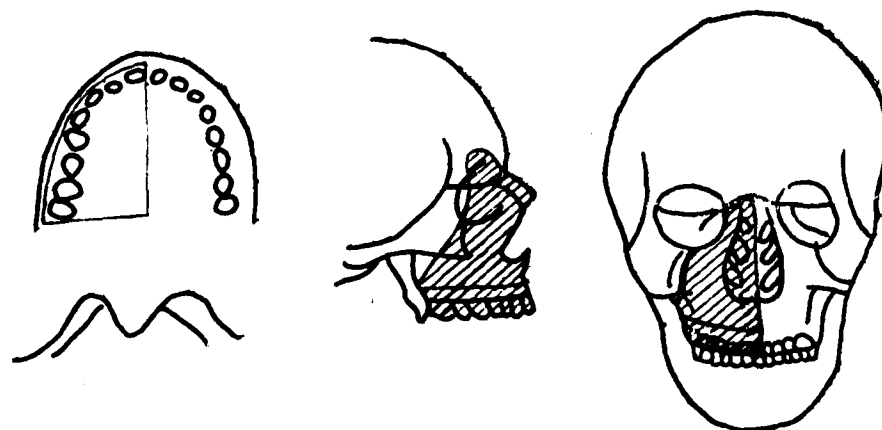


The area removed.



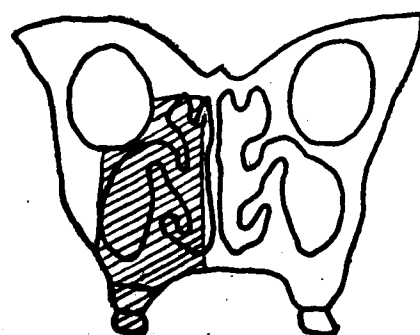
5L
L183: 7m2, N490T
N56.8.12

HOLMGREN—HARMER OPERATION



Incision.

The area removed.



The area removed.

grow giving rise to an horribly distorted face. This is because metastasis is so very infrequent in these cases and death comes only with intracranial extension. But there are some cases which we have had to turn away i.e., bilateral ethmoid involvement and extensive skin ulceration. I feel that cases in which the skin is involved are the worst, for that means leaving a large skin defect very difficult to close. In two such cases months of hospitalisation and tube grafting by the plastic surgeon failed to close the defect. In spite of the most extensive operations the operative mortality is nil.

Diathermy.—The use of heat to destroy tumours is not new. The Fire Drill was used in Egypt in 1600 B.C. or earlier. Hippocrates in 400 B.C. wrote 'The man who had a carcinoma of his throat cauterised by us was cured'. Celsus, Galen and others all used it (N. Paterson). Diathermy has the advantage that the heat penetrates beyond the surface. It can be used in three ways: (1) Piecemeal destruction of the tumour with coagulation diathermy. This takes a long time and a lot of blood is lost. I used it to begin with but gave it up after Professor Portman visited us. He uses method number (2) Rapid surgical removal followed by a powerful coagulation diathermy to all areas where the tumour was attached. This is the method I now use. (3) A diathermy dissection using the cutting current, first advocated by N. Paterson.

Unless you can excise the tumour with a surrounding 2 cms. of healthy tissue, the use of diathermy is essential.

Irradiation.—There are those who give a full course of deep X-ray or Teleradium before the operation, but the majority of surgeons do not advocate this. In one case whom we irradiated the tumour had not visibly regressed at the end of the treatment. Nevertheless, this is the only patient who is alive without recurrence after three years. Following deep X-ray he had the Harmer—Holmgren operation, diathermy and radium into the cavity. It was a comparatively early case; even though it was

an anaplastic carcinoma of the ethmoids, that had entered the antrum, it had not extended beyond this. In another case the tumour got larger during deep X-ray therapy. In two others it practically disappeared but recurred within a few months; had radical surgery followed the first course of deep X-ray the first of these might have been alive to-day. The second is a recent case and I cannot say what the end result will be.

A short intensive course of deep X-ray about one third full dose (not more than 3000r) given in four to six days followed immediately by operation is advocated by Harmer, Cade and others. We do this whenever possible.

Following surgery, most surgeons advocate intracavitary radium. We use this method invariably, 30 mg. of radium in 5, 10 or 15 mg. tubes placed against areas of tumour attachment for seven days. The packing along with the radium is removed at the end of seven days.

Rehabilitation.—All is not over when the last packing is out. The patient is left with a large cavity, and half his upper jaw missing. He has big problems with speech and swallowing. We therefore have an obturator fitted with or without teeth as soon as possible after the packing is removed. The patient must be taught how to remove, clean and replace the obturator, this may take a few days. The care of the cavity is important as it takes a long time to epithelialise. Daily irrigation and removal of sloughs and painting with a mild antiseptic is done. Keeping the cavity packed lightly with sterile gauze which should be changed once or twice a day helps to keep the cavity clean. This, and irrigation, the patient can be taught to do himself.

SUMMARY

Radical surgery, diathermy and irradiation are presented as the treatment of choice in carcinoma of the sinuses. Rehabilitation of the patient is an essential part of the treatment.

BIBLIOGRAPHY.

1. Collins & Pool., 1950, Radiology. 55 : 41.
2. Capps, F. C. W., 1950. Proc. Roy. Soc. Med. 43 : 665.
3. 1952, in Scott Brown's Diseases of the Nose, Throat, and Ear.
4. Cade, S., 1949, Malignant Disease and its Treatment by Radium. Vol. II.
5. Davis, E. D. D., 1934, Brit. Med. J. 1 : 53.
6. 1953, Brit. Med. J. 1 : 582.
7. Grossman, A. A., 1950, Can. Med. Ass. J. 62 : 576.
8. Harmer, D., 1935, Lancet. 1 : 129.
9. Kyle, D. B., 1916, Diseases of the Nose and Throat.
10. Loeb, H. W., 1917, Operative Surgery of the Nose, Throat and Ear.
11. Mackenzie, D., 1920, Diseases of the Nose, Throat and Ear.
12. McBride, P., 1900, Diseases of the Nose, Throat and Ear.
13. Moffet, A. J., 1952, J. of Laryng. Otol. 66 : 132.
14. Negus, V. E., 1948, in Thomson and Negus, Diseases of the Nose and Throat.
15. New, G. & Cabot., 1935, Surg. Gynec. Obst. 60 : 971.
16. New, G., 1938, Amer. J. Surg. 42 : 170.
17. Orton, H. B., 1947, in Kernan's Surgery of the Nose and Throat.
18. Paterson, N., 1934, Lancet. 2 : 635 & 694.
19. Stevenson, R. S., 1935, Recent Advances in Laryngology and Otology.
20. Thomson, St., Clair, 1911, in Diseases of the Nose and Throat.
31. Tilley, H., 1919, Diseases of the Nose and Throat.
22. Williams, I. G., 1950, in the Principles of Pathology.

Uncommon causes of Nasal obstruction

BY

Dr. S. JAIN (Hyderabad)

CONGENITAL DEFECTS

Apart from the gross malformations of the nose like triple nares described by Holmes the most interesting congenital defect is that of posterior Choanal atresia. This is considered rather uncommon. Kazanijian gives some figures to prove the rarity. He states that in the records of the Massachusetts Eye and Ear infirmary from 1922 to 1938 he found ten cases of postnasal atresia from a total of 62,228. Now the cases are being diagnosed more often. Benfield was able to collect 274 cases recorded in past century upto 1949.

Embryology of this region is not still clear. Arey states that a thin membrane called Bucconasal membrane ruptures during the seventh intrauterine week creating two internal nasal orifices, the primitive choana. For a short time the two choana open directly in the primitive oral cavity, this simulates the permanent condition in the amphibia. However the definitive nasal passages presently become separate by the partitioning off of the portion of the mouth cavity and adding of this to their original extent. Non rupture of this membrane will cause atresia of the choana. It can be unilateral or bilateral. This membrane is lined by Nasal and Pharyngeal mucous membrane with mesoderm in between. On the growth of mesoderm remaining, will depend the nature of atresia, membranous or bony. It is clear from the above statement that it is always membranous if observed at birth.

Bilateral Choanal atresia in infants is of grave importance and requires prompt surgical correction. According to Thompson "the nose is the natural and instinctive channel for carrying on respiration. With rare exceptions all the infants breathe entirely

through the nose. If the nose of the sleeping child is gently closed, he will continue to make increasingly violent efforts to draw through it; when this proves useless he will waken and grasp for breath, instead of simply opening and using the mouth as the airway. Even when mouth breathing is partially adopted to supplement the nasal airway, the latter remains the route preferred by instinct and as much air as possible is drawn through it. Mouth breathing is an acquired habit". Atresia also creates a problem in the feeding. Failure to recognise this condition has resulted in the death of infants in the first week of life, under the mistaken diagnosis of Asphyxia neonatorum. The region of the Choana does not attract the attention during the Post mortem examination and so many such cases pass unnoticed.

Adult patients with Unilateral atresia complain of little discomfort or distress of their disability. Accumulation of thick white mucus is the only complaint. This is removed by the patient by gravity, the patient lowering the head and permitting the retained material to drain, assisted by pressure on the *ala* of the nose. There might be associated hereditary tendency as a case of the same defect in mother and the daughter has been reported by McBaker.

Before describing the cases I wish to state some of the observations, also noticed by others, which may be of help in confirming the known facts about the Physiology of the nose.

The sense of smell was absent in the case of an adolescent boy with atresia (Unilateral) on the side of obstruction confirming the view that active air currents are necessary for olfaction.

The accessory nasal sinuses were fully developed on the occluded side refuting the belief that air pressure has any role in the development of sinuses. Biopsy studies of the Nasal mucosa have shown no departure from the normal and the activity of nasal cilia was unaltered. The incidence of Rhinitis is rare and sinusitis is an uncommon complication.

Hearing on the affected side was normal and there was no history of ear infection. It suggests that the function of the Eustachian Tube was not affected despite lack of nasal respiration. This has also been observed in the post laryngectomy patients, who do not breathe through the nose.

Benfield has given a beautiful summary of the instruments and methods employed in the correction of this condition. "The first attempt at making an opening was made with a trocar; this was followed by the use of galvanocautery, chemical cauterisation, the hand drill, chisel and curet. As the technique improved a septal flap was created; the removal of the posterior end of the vomer with a Rongier was then performed. This was followed later by performing submucous resection with the removal of posterior third of the septum. A transpalatine approach was described and Vomer alone was removed. A split skin graft wrapped around a catheter and inserted in the opening was used. Then a full thickness graft on a catheter after perforation of the atresia. A sphenoid punch was used to remove the posterior edge of the septum at the time an opening was created. Electrocoagulation was tried. The perpendicular plate of the ethmoid bone was removed after perforation of the atresia with the chisel. The mucous membrane over the anterior surface of the atresia was elevated after submucous resection was done, and its elevation was followed by the removal of one-half inch of the membranous septum. The posterior part of the Vomer was removed and the mucus membrane split, through which a No. 18 catheter was inserted. A submucous resection with the removal of Vomer and Posterior third of the septal soft tissue was done. An approach by way of antrum was described; the end of the catheter was vulcanised and placed in the opening. From this description one is impressed with the difficulty encountered in the approach of posterior nares as well as with the greater difficulty in maintaining a permanent opening".

Four cases of Choanal atresia came under my observation. One at Hyderabad and three at Toronto. Three were bilateral and one Unilateral. Out of these two had other congenital defects

accompanying this condition. One had congenital tracheo-oesophageal fistula and the other had transposition of the main blood-vessels. As these anomalies are not compatible with life they succumbed after less than four days of birth and beyond diagnosis nothing was done for them.

In bilateral atresia cases, specialist advice was sought due to respiratory trouble aggravated while feeding. One case was unable to breathe without an airway from birth and an intra-tracheal tube had to be introduced before referring him.

The only surviving case of the bilateral atresia was operated on when he was ten days old. Under general anaesthesia the diagnosis of membranous atresia was confirmed. Due to simplicity of the procedure it was decided to try retaining a Polyethylene tube after relieving the obstruction. A finger was kept in the Nasopharynx as a guide and the membrane perforated by the aid of a Trocar. Redundant mucosa was excised. A polyethylene tube of about the size of external nares was used. It was bent like a horseshoe and adequate size opening was made at the bend so that a child could breathe with the tube *in situ*. The two limbs were withdrawn through the nostril with the aid of catheters as they are used to introduce the post nasal plug. So the bend remained locked by the posterior edge of the septum. The child was relieved of the cyanotic attacks and was no more a feeding problem. The two ends of the tube were tied at the columella. The mistake was realised after about a week because it resulted in a partial pressure necrosis of the columella. The tube was removed after a week and the other one reintroduced. Surprisingly there was no blocking of the tube due to clogging of the nasal secretion. This tube was retained for one month, and removed. The parents of the child had given up the hope of the child as incurable and so when they came to take the child home they were very happy and did not mind slight pulling of the tip due to columella atrophy. However we offered the services of our Plastic Department for the repair of the deformity when the child gets around fifteen. He was seen

every month thereafter. At the end of six months Choanae were patent, of fair size, however I think he may need dilatation as he grows older.

The unilateral case was diagnosed during routine palpation of the Choana after the adenoidectomy operation, in a boy aged nine years. This was complete and bony. Later on the history of sticky mucoid discharge on that side was obtained and the child said that he could never blow his nose from the left side. The diagnosis was confirmed after taking X-ray by instilling lipiodol on that side. It is necessary to suck out all the retained secretion before instilling Lipiodol.

In this case sinuses on the left side were normal. His ears were alright and hearing within normal limits. The sense of smell on the left side was absent.

In this case also a similar procedure was adopted with the only difference that a straight tube was used. This case also had a patent post Choana at the end of a follow up of about ten months.

STENOSIS OF THE NASOPHARYNX

This is another rare condition that can follow a destructive damage of the mucus and sub mucus tissue of the nasopharynx. The damage may extend at any level of the posterior pillar of the fauces resulting in the contractile ring distorting the entire nasopharynx, and obstructing it with a thick scar tissue resulting in nasal obstruction, change of voice etc. This can be due to trauma or chronic granulomata. Trauma is usually due to badly done tonsillectomy; chemical burns also can cause scarring due to regurgitation, but Hypopharynx is a more common site. In the infections most common are Syphilis, Tuberculosis, Diphtheria and Rhinoscleroma.

Any surgery in this region is very difficult. Skin graft hardly takes here because of avascularity of the Fibrous tissue and almost impossibility in immobilisation of the area.

The literature is scanty. In 1896 Nicholas discussed the scarring sequelae of Syphilis in the pharynx and its treatment. Of the 18 cases reported by Figi Six were after Tonsillectomy. Five followed Syphilis, two Rhinoscleroma, two Inflammatory reaction and one case each of Diphtheria, burn and congenital obstruction.

In the sixteen cases of Kazangian et al, nine followed tonsillectomy, three sepsis, two syphilitic one Tubercular and one possible Diphtheria. Curtis has gone to the extent of swinging in a flap of skin of the neck through the lateral Pharyngotomy. McIndo discussed the problem and advocated application of a skin graft held over a dental Stent. Figi advocated the utilisation of the Pocket skin grafting. This is employed to re-establish the lost epithelium, which may be utilised to cover the raw surface established by opening up the stenosis. It is fortunate that this is one of the comparatively rare conditions as it is one which is difficult to overcome.

Mr. R. S., a student of the engineering college was seen for complete nasal obstruction, of six years duration. In 1946 he had an attack of severe cold which was accompanied with hoarseness and severe nose bleeds. This was followed by suppuration in the left ear which lasted for about a year. After this he felt that he was alright for one year but later on he had definite difficulty in breathing.

In 1952 he developed cervical adenitis right side. This was diagnosed as tubercular and he was given ten vials of streptomycin. These glands were later removed in October, 1954. He had recurrence of his nosebleeds in 1955 for which his nose was cauterised by a general practitioner. It is after this that his nose blocked off completely. In December 1954 he was admitted to the hospital. His S. T. S. reaction was negative. Transpalatal approach was tried to relieve the adhesions which had reduced the space which could hardly admit the tip of the little finger. However so much fibrous tissue was encountered that it was almost of no avail to try and remove it for fear of recurrence. Rt. Choana could be partially freed by this procedure.

This case was reviewed again after four months. His audiogram at this time was recorded. I do not know if streptomycin had any part in this hearing loss but most of it appears to be due to Eustachian blocking.

This time a modified Nicholas technique was tried. A suture was inserted through the base of the web on either side of the nasopharyngeal opening. Four leadshots were tied tightly with this. These lead shots exert their weight on the Cicatricial tissue due to gravity and cut through it. The tract will become epithelised at the same time. This procedure was supposed to be repeated by the insertion of other sutures laterally until an adequate tract and airway resulted. Patient did not turn up for another five months. He was seen last by Dr. A. B. N. Rao and he reported that nasopharyngeal opening was bigger and patient could breathe freely through the right nostril. The oetiology of this case is controversial. The cauterisation of the nose might have aggravated the condition but tuberculosis appears to be at the root.

Besides these I had following cases which I think deserve mention.

A. R. an adult aged 24 years was referred from the district Civil Surgeon for Submucous resection. He gave a history of one sided nasal obstruction as long as he could remember. On anterior Rhinoscopy there was a greyish looking object in the left nostril. This gave a gritty and hard feeling to the palpating probe. A diagnosis of Nasal Rhinolith was made. It had to be split in three pieces before it could be dislodged from the nose. It had pressed the inferior turbinate to the lateral side and the septum to the other. The sinuses were clear.

Further enquiry of the patient as well as the parents did not reveal any history of foreign body. No focus could be found in the material removed.

Kolmen reported a case of foreign body in the nose of 28 years duration. In his search for comparable cases in the literature he found the following recorded. Erdely extracted a piece of broken adenotome, Kiessman a vegetable stalk, Bundel and Lo a splinter of Sharpnell. In these three cases F. B. was present for more than 20 years.

The Rhinolith of such a long duration is a rarity.

I also will like to mention the case of a man 25 years old in whom the diagnosis of antrochoanal polypi was missed for not doing posterior rhinoscopy elsewhere. This was not visible anteriorly although he was having it for more than 9 years.

This was differentiated from the allergic polypi with the help of following features.

It arose from a small area and was solitary. This was the only polypoid change in either nostril and there was no history of allergy. Blood picture and nasal smears were normal.

In the end I shall like to thank Dr. J. B. Whaley and Dr. A. B. N. Rao for permitting me to report a few cases of their hospital.

BIBLIOGRAPHY.

1. Holmes E. M., Congenital triple nares, Archives of Otolaryngology, July, 1950.
2. Arey Text book of Embryology.
3. Kazangian V. H., The treatment of the congenital atresia of the choana Annals of Otolaryngology (51) 1942.
4. Benfield H., Treatment of Unilateral bony atresia, Archives of Otolaryngology 1951.
5. Congenital atresia of posterior nares. McBaker Archives Vol. 59.
6. Kazanjian & Holmes, Stenosis of the Nasopharynx, Archives Vol. 10.
7. Kelman G., Spontaneous Expulsion of Nasal F. B. after 28 years. Laryngoscope 1940.
8. Van Alyea & Makart C., Rhinolith, a case report, Archives Vol. 56.
9. Canfield N., Foreign body in food and air passages. Connecticut M. J. May 1937.
10. W. Heck et al Antrochoanal polyp, Archives Vol. 10.

Association Notes

THE EIGHTH ANNUAL CONFERENCE OF THE ASSOCIATION OF OTOLARYNGOLOGISTS OF INDIA

The Eighth Annual Conference of our Association was held at Trivandrum on the 30th and 31st December 1955, and on the 1st, January 1956. Inspite of Trivandrum being the southern most end of the country, we had a good representation of the delegates from far off corners of India, like Amritsar, Assam, Calcutta, Bombay etc. There were about thirty-five delegates in all, and we really enjoyed meeting all our brothers from different places and spending three happy days together.

The deliberations took place in the beautiful campus of the New Medical College, and many of us were reminded of the conference of the Osmania University, Hyderabad. After the usual excitement, which prevails during the registration of delegates, when one meets the other after a long time with a happy face and a good hand-shake, the members were conducted to the open ground for the group-photo. As usual the chairs were reserved for the V. I. Ps, while the rest of us lined ourselves in the second and third rows. We then adjourned to the beautifully decorated common hall of the medical college to hear the 'Welcome Address' by Dr. V. R. Narayana Nair, Chairman of the Reception Committee. The Hon'ble Minister for Health, T-C State, Shri. A. A. Rahim, delivered the inaugural address, which was much appreciated by all.

Dr. Tulsidas, our President, then delivered the Presidential address, which was, according to the popular opinion, "a very well thought out brilliant oration". Dr. Tulsidas discussed the problems touching on the All-India Institute of Medical Sciences, the psychosomatic concept of medicine, welfare state and intellectual leadership, undergraduate medical education, post-graduate teaching, honorary system of medical professors, research work in medical fields etc. The presidential address was very much appreciated by all those present, and for the benefit of those that could not attend the conference, the address is published in this journal. The morning session concluded with a vote of thanks proposed by our popular senior member, Dr. D. Ram.

The scientific session of the conference was held at the pathology museum of the college, and thanks to the enthusiastic and kind co-operation of Dr. M. Thangavelu, M.D., Professor of Pathology, the arrangements were

THE EIGHTH ANNUAL CONFERENCE AT TRIVANDRUM

(30—12—1955)



perfect. The scientific session had hundred percent attendance, which is rather an unusual thing in big All-India conferences, especially when held in such big and beautiful cities, with a lot of shopping attractions. None of us was prepared to miss the scientific papers, which was interesting and of a high order, but we all felt that the conference, in future, should have only three or four-hour session in the mornings, so that, after lunch some may go out shopping with their charming but expensive wives, some others may go out sight seeing with their cameras, while a few wise men may indulge in their usual siesta.

The majority of the delegates were accommodated in the newly constructed mens' hostel. The remaining few important members were accommodated in the State Guest House. The lunches and dinners were, as usual, very heavy and grand. The vegetarians were also well looked after in the conference, and as a vegetarian myself, I offer my special thanks to the organisers of the conference.

The Indian classical dance entertainment on the 30th night, by the charming girls of "Tampi family", was greatly enjoyed by us all. We realised that "Tampis" stand not only for excellent organising capacity, but also for high artistic talents. For the success of the conference, we are greatly indebted to the "Tampi Family". The presidential dinner, which followed the dance, was rich and grand, in keeping with the president and his address. We also had another dance entertainment on the next day, which was the classical Kathakali of the west coast.

We enjoyed our visit to Kovalam sea shore and the few of us, who indulged in sea-bath and 'Kattamaran' ride, surely provided ample entertainment to those on the shore. The Tea, which followed the sea-bath, was really very welcome, as also the songs sung by the few lady-volunteers and Mrs. Balakrishnan. During our return trip from Kovalam, the moonlight was so beautiful and intoxicating that the president and some of us decided to go to Cape Comorin during the night itself, instead of the next afternoon. Dr. Tampi, with great difficulty arranged the bus for us, and we "took off" to Cape Comorin at about 1 a.m. that night, after the dance and subscription dinner. We were all in one bus and in high spirits (though we did not have the 'spirit', Trivandrum being 'dry'). The moon was full and maddening, and so we behaved like a group of mad children, singing and shouting and indulging in 'juicy' jokes. We reached Cape Comorin at 4-30 a.m., and after an hour's sleep in the bus itself, we rushed to the sea-shore to witness the sun rise. But alas, there was a long patch of dark cloud, just above the horizon which prevented us from seeing the sun rise. Dr. Tampi felt sorry that he did not possess any super human powers to drive away the cloud, for our sake.

We returned two hours late to Trivandrum and so we were too late for the general body meeting. Dr. Amesur and Professor Satyanarayana, who did not join our trip to the Cape had to conduct the general body meeting, with one other member Dr. V. R. Narayana Nair.

In conclusion, I wish to express our special thanks to the men and women volunteers, who did excellent work under the able leadership of Dr. Zachariah. The conference was a grand success and we will remember it always.

V. S. SUBRAMANIAN,
Editor.

PRESIDENTIAL ADDRESS

By Dr. TULSI DAS, F.R.C.S., D.O.M.S.

Respected Health Minister, Chairman of the Reception Committee,
Ladies and Gentlemen!

It is a great privilege to be asked to preside over the deliberations of such an august assembly. I had accepted this signal honour last year in the full knowledge that I deserved it the least and that my feeble shoulders may sag under this heavy responsibility. I would, therefore, crave your indulgence if I fall short of your expectations.

One deciding factor that helped me in readily bowing to the commands of my colleagues was my curiosity to see this marvellous land of the East, rich with scenic beauty and rare minerals the birth place of the great Guru Shankar Acharya and the place with highest percentage of literacy in the East.

15th of August, 1947, is a red letter day in the history of this subcontinent. We achieved independence after a slumber and sloth of a millenium. We, who were the leaders of creative thought were lying low, dubbed as savages by all the civilized world except a few thinkers who delved deep, and could peep beneath the surface. They knew a breath of fresh air will bring us back to life again. It is no wonder that this has come true. In less than a decade, India of the past has become a focus of attention for the world and all eyes are rivetted upon us. Last summer I was in Europe and had an occasion to meet the highest in our profession. They were all so eager to pay homage to this land of ancient culture. Thanks to Gandhi and Nehru, we can hold our heads high and walk in step with our brothers abroad. Permit me to relate one incident which will convince you in how high an esteem our Nehru is held. Geneva was exceptionally bright and warm one day and somebody remarked it was an Indian summer. Another

corrected him by saying no, 'It was Nehru's summer'. I was proud I belonged to his country, but all this made me more self conscious and introspective. This reflected glory would not sustain long unless India could offer something in the realm of medicine as she did in the hoary past. Have we created institutions or the necessary climate for the advancement of science? Thanks to our late Dr. Bhatnagar, we have created 14 temples of science with magnificent buildings and with latest equipment. But to man them with the men of Science would take some time as men are not produced like bricks in a kiln. It takes at least ten years to produce a real, generous teacher or research worker.

I. All India Institute of Medical Science:

We, medical men, are left behind in this race, as the Medical temple, The All-India Institute of Medicine is yet to be born. Although the signs and symptoms of the first stage of labour are evident and soon we may have the new baby with us. Let us all unite in an endeavour to look after this baby with care. She is going to be the first of its kind. There are always special difficulties in the rearing of the first, but the experience so gained will help us to foster future ones more easily. The staff for looking after this baby has been advertised. I am a bit apprehensive. I would humbly suggest to the authorities to call upon the highest medical talent available in our country to come and shoulder the responsibility. This institution is the first post-graduate all India centre and people would naturally be expecting too much from them. Lest they get disappointed, we should man it by the highest and charge them with the sacred duty of keeping the torch of scientific learning aloft and burning. These stalwarts will have to keep pace with the intellectual giants of the older sister institutions of the west. It is possible we may not be able to find ample suitable material, let us not hesitate to invite people from abroad on tenure basis till native talent comes up to the mark. May I submit, medicine is international, it needs no bounds or barriers artificially raised by man and nature. Science is one. In the olden days when means of communication were very poor and hazardous, the concept of medicine and the basic principles were the same all the world over, i.e. *Vata*, *Pitta* and *Kafa* constituted the ætiological basis of disease as contrasted with the germ theory of today. With the modern means of communication the distance is annihilated, the world is shrunken and the contacts have become much closer and more intimate.

II. Psycho-somatic Concept of Medicine:

The world has grown tremendously in scientific stature although its Psyche is still comparatively undeveloped, the result is that we find so much of maladjustment on all fronts and allergic reaction on the slightest provocation. The greatest attribute of a medical man is considered his

'Amiable Disposition' which makes him the darling of his patient. The test of the Doctor's amiability is held every day by the bedside. A little coarseness on his part will make the patient withdraw in his shell, he will look at him with cold stare and may bare his chest at his command but will not uncover his mind. We of the east, had made a special study of the Psyche (mind) and, therefore, can make a positive contribution in bringing a psycho-somatic approach not only in medicine but in all worldly affairs and contribute our humble bit to the advancement of science of human relationship.

We have another great advantage. We are born of the conflict of the warring groups. We have no alignments so far and if we keep straight we may be able to resolve the conflict and bring peace into this distracted world where tempers are frayed, where knowledge is supreme but not mellowed by the wisdom of yesterday.

III. Welfare State and the Intellectual Leadership :

Time has come when we must accept the challenge of changing concept of human relationships. We are all endeavouring towards a welfare state where we must provide for everyone, positive health, not only the physical health for the body but more surely emotional, intellectual and spiritual health for the heart, mind and soul respectively. We have been responsible for ignoring the last three and looking only after the material and physical health with the present medical rivalries. I look to the medical man especially because he is selected for admission to the medical college from the top intellect of his country and is given a thorough grinding in this noble fraternity. Why should he not assume the intellectual leadership of his country? Everyone of us, wherever he may be, can contribute his humble bit towards the improvement of his social surrounding. Let him not plough his lonely furrow but come out and make a positive contribution as an intellectual citizen inspiring people not only by precept but also by his example. Let him live a dedicated life of selfless action. Let him look upon his position as an opportunity offered to him to serve the ailing humanity and incidentally to earn his livelihood and not to look upon his profession as a trade or business primarily meant to make his living and incidentally to have an opportunity to serve the people. This change in concept will raise him in stature. This will need a new orientation in medical education.

IV. Undergraduate Medical education :

Undergraduate medical education is undergoing a great change. Hours and hours of deep thought are being consumed to produce a broad-based medical man suited to the changing environments of each country.

Recently we had a Conference on Medical Education at Delhi to which all Principals and Deans were invited. After frank discussions they had taken decisions almost identical with those taken by the World Conference on Medical Education held two years ago. The main object was not so much to produce an independent medical practitioner but to lay sure foundation for creating a medical career in a youngman so that with continuous efforts he will be a truly scientific medical man one day.

The phenomenal advances in scientific knowledge has necessitated a reorientation of the medical man to be better equipped to meet the growing demands on his professional skill. We no longer need medical sleuths or Medical Sherlock Holmes concerned only with their professional skill and scientific techniques but the nation demands a broad-based medical man with a fundamental knowledge of *humanities* (art, literature and philosophy) basic sciences, in addition to the wisdom and experience of his own profession. Therefore, in teaching great emphasis is being laid on the fact that the patient is the best teacher and that the best approach to him is in his natural environments where you could study, not only the disease, but the patient himself, his environments—both social and physical. This needs *Guru-Shishya* (student-preceptor) combination of the old. If this were physically impossible the second best will be rural health centres where all patients from the rural area would collect. If the establishment of such centres has to take time, I would consider the outpatients department of the rural and of the town dispensaries as the starting place. The out-patients departments of a teaching hospital do offer the same facilities but either serious patients or referred patients come to these places with the result that the first contact with the ordinary disease is either not there or is much less than in rural practice. I would suggest an opening of a general practice unit in each outpatients department where patients come unassessed and every medical student has to depend upon his powers of *observation*, *deduction* and *integration* to arrive at a final diagnosis under the stimulus, guidance and supervision of the teacher who is a silent observer most of the time.

It has now been fully realized that clinical methods are different from clinical medicine: the one is to be taught and the other is to be learnt. Teaching in essence is thinking and thinking is the most difficult part of teaching. In the undergraduate teaching the main emphasis is now on 'How to think' and subsidiary consideration is on 'What to think'. Whereas in postgraduate teaching the main emphasis is on the latter.

The teaching (training) and education (learning) are two mutually exclusive terms. The former means acceptance of knowledge and the latter is acquisition of knowledge or put it in another way, the one is how much you can put into a student and the second how much you can draw out of

him. Therefore, the basic necessity in a country where too many colleges are being opened after the partition, is 'to teach the teacher how to teach'. The immature and subteachers overflowing with scientific knowledge recently acquired here and abroad are too enthusiastic and therefore too authoritative. They are all action and knowledge; they need wisdom of yesterday and vision of tomorrow added to the knowledge of today to be a complete teacher.

V. Honorary System of Medical Professors:

I am glad to say that one of the great exponents of honorary doctors in this country, our revered Finance Minister of Bombay Dr. Jivraj N. Mehta is a full convert today. Personally I may mention that I am strongly opposed to the existence and further continuance of the system in any form, not that it is intrinsically bad but the first love of the honorary teacher is his bread and teaching is relegated to the second position. Therefore it is an anachronism in a welfare state.

VI. Post-graduate Teaching:

No teacher worth the name can keep his armour shining and bright unless he undertakes post-graduate training. This alone can stimulate him for further study of the recent literature on the subject. It is, therefore, in the interest of the teacher and the taught that the institution if it has any claim to be called a modern institute it must have facilities for postgraduate training.

VII. Research:

No teacher worth the name can be called a University teacher if he does not think and reflect, deduce and evaluate. He must fix up at least two hours a day for rumination, discussion with his colleagues and work in research and experimental laboratory. So much clinical material is allowed to waste in our country because of the apathy of the powers that be. It may be partly apathy and partly lack of understanding that research can be carried out only when you have leisure and you have staff specially reserved for research. If your time is occupied with the routine, you may be a genius, no research will be possible. Research is a jealous mistress exclusively possessive, wishing to hold you in close embrace to produce anything worth while.

VIII. Specialities:

I cannot help quoting the memorable words of Sir Clifford Allbutt 'It will be a bad day in the history of medical education when surgery will be separated from medicine'. This puts in a nutshell the real scientific outlook. All medicine is one, it may have different names given to its various fragments. This fragmentation however wrong in concept has given such an impetus to the advancement of various branches of medicine and that it

could not be possible otherwise. The two specialities of Ophthalmology and Oto-Rhino-Laryngology stand as a class apart. They deal with the five senses which are absolutely essential for the acquisition of knowledge of all branches of medicine. Their study, therefore has a peculiar importance and cannot be dismissed as one of the specialities. In all hospitals especially in children, 25% of the diseases belong to E. N. T. and another 25% to eye. This means that if the child is to be a useful member of the state he should be provided with all facilities to have a pair of healthy eyes, ears etc. These two specialities are so interlinked, that you may ration them, de-emphasize them but you cannot place them under either surgery or medicine alone as they deal with both. They moreover have become so technical that they cannot serve their proper role under either of the two. In our country where *preventive and social medicines* are just in their infancy, the importance of Eye and E. N. T. cannot be over-emphasized. Moreover the diseases of Eye and E. N. T. are much more common in our country than in the West. The number of specialists in these branches in our country are too few and, therefore, the main responsibility has to devolve on the *general practitioner* with the result that he must have a knowledge of the fundamentals of these two specialities. They must have separate departments independent of surgery. Ophthalmology has been given three months training by the Medical Council but E. N. T. has been downgraded too much. There should be atleast six weeks training in E. N. T. A separate clinical, practical and theoretical examination combined for both specialities, although taught separately by specialists of their own subject.

IX. Handicapped Children:

Our Government have started moving. It could not do otherwise if its aim was to have a welfare state. The children are its asset. We are grateful to our Prime Minister Uncle Nehru who takes keen interest in the welfare of our children. The blind and the deaf need special care. The private associations are doing some thing for the blind but there is no institution looking after *our deaf* (total or partial) children. A National Advisory Council has been formed and soon we may have a few centres for the training of the deaf, and deaf mute. If deafness comes too early in life, speech is not possible. At least one home in each state is needed for the deaf wherein they are given the special training. Let them no longer remain a burden on the society but become useful members.

Deafness in children presents a special problem. Congenitally deaf or one rendered deaf too early in life becomes dumb also. He cannot acquire speech so essential for communication between individuals. Uncompensated deafness, interferes with the person's intellectual and emotional life. Unless properly trained and educated, he will grow mentally retarded and socially ill-adjusted. Audiology clinics, one each in Delhi, Bombay, Calcutta and

Madras will be essential to make a start and then one in each State. Here the Otologist, the teacher for the deaf and Psychologist should co-operate in addition to technicians. Dr. Amesur is a member of the National Advisory Council and may be able to throw better light on this subject during scientific discussion.

X. Interchange of Teachers and Scholars:

In a country like India with such vast distances and different languages it would be worth while to have at least 20% of students and teachers both, in medical institutions from other States. This will bring about not only exchange of ideas but also harmonious blending of the different views and help in the disintegration of provincial barriers. It would be better still to invite medical teachers from abroad who will be roving ambassadors of Science. Meetings with them will produce exchange of ideas and a widening of the mental horizon of our own teachers and will also afford us ample opportunities for export of any new ideas before they ossify.

To sum up, the medical students must have a broad-based pre-medical education with a well integrated preclinic and clinic training to equip him with a knowledge that lays the real foundation of an academic career in medicine. The aim of medical education is to produce a basic Doctor (not general practitioner) who can build up any branch of medicine as his speciality as he grows up and finds opportunities and facilities for that particular branch. The emphasis to be in undergraduate training or learning rather than teaching. The best place for it is patient's home which may not be possible, next best is rural health centre, next to it is general practice unit in a teaching hospital. Then comes, the outpatient department of teaching hospital where still the patient is in his own clothes, ambulant and with his relatives. The patients under a red blanket in wards are already labelled and prejudiced. Internship is a necessity for the real independent treatment and follow up by the student doctor. The examination phobia is to be beaten down and it is shameful for the institution to find such a heavy percentage of failures especially when the students are selected from the 10-15% of the intelligentsia of the State. I cannot forget the words of Dr. Allen Greg (Rockefeller Foundation) 'The percentage of failure should be a good 0.5% and the ceiling should not exceed 3%. The specialities of Eye and E. N. T. need special attention as they deal with senses, all important for the pursuit of knowledge'.

Before I sit down, I must reiterate that a deft hand can produce a wonderful technician, a combination of deft hand and wise head will give you a good diagnostician (Dr. Watson of Sherlock Holmes) but only a rare combination of deft hand, wise head and sympathetic heart will produce a *real physician*, who will be the darling of the patients and a noble creation of the healing art.

JAI HIND!

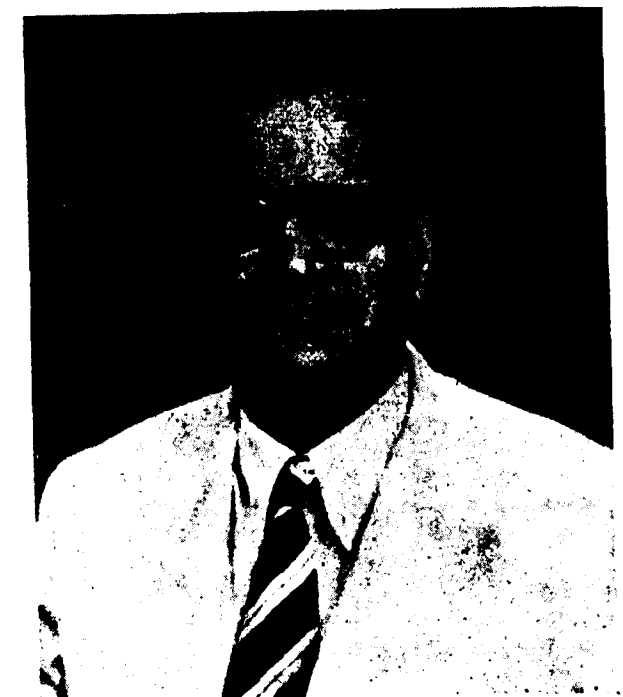


Dr. TULSI DAS

President 1954-'55

AND

Chairman, Editorial Board 1955-'56



Major K. K. GHOSH

President 1955-'56

NAMES OF OFFICE-BEARERS

Elected in the General Body Meeting held on 1—1—1956.

PRESIDENT—

Major K. K. Ghosh, F.R.C.S. (EDIN.), D.L.O. (LOND.), L.T.F.,
12, Dharamtala Street, Calcutta.

IMMEDIATE PAST PRESIDENT—

Dr. Tulsi Das, F.R.C.S., D.O.M.S.,
Glancy Medical College, Amritsar.

HON. SECRETARY—(with the additional duties of Hon. Treasurer)

Dr. R. A. F. Cooper, M.S.,
Navsari Building, Hornby Road, Fort, Bombay-1.

MEMBERS OF THE GOVERNING BODY—

Dr. C. A. Amesur. Dr. M. M. Nath.
Dr. R. N. Misra. Dr. V. R. Narayanan Nair?

MEMBERS OF THE EDITORIAL BOARD—

Chairman: Dr. Tulsi Das, F.R.C.S., D.O.M.S.

Editor: Dr. V. S. Subramanian, M.Sc., F.A.C.S.

Treasurer: Dr. (Miss) C. M. Leelavathy, M.S.

Editorial Secretary: Dr. U. Ananda Rao, M.B.B.S., D.L.O.

SECRETARY'S FINANCIAL REPORT

<i>The year opened with:</i>	Rs.	A.	P.
Cash in hand	2,929	12	3
Investments at cost	4,877	14	6
Making a total of	7,807	10	9
Subscription received from members was	2,988	0	0
Dividends and Interest received was	219	7	9
Making a total income of	3,207	7	9

The following expenses were incurred:

PAYMENTS	Rs.	A.	P.
Advance to Indian Journal of Otolaryngology ...	723	0	0
Salaries ...	240	0	0
Printing & Stationary ...	15	7	9
Postage & Telegrams ...	215	0	0
Bank charges ...	21	2	0
Auditors honorarium ...	50	0	0
Seventh Annual Conference expenses ...	250	0	0
Totaling ...	1,514	9	9

On behalf of the Indian Journal of Otolaryngology we purchased 4% Bombay Municipal debentures 1954—64 for Rs. 3,000/- which have been deposited with Lloyds Bank Ltd. Bombay. The schedule of the investments in possession of Lloyds Bank Ltd., on our behalf was published in last journal. Application and allotment money for 3 Ahmedabad Electricity Shares Rs. 76-8-0 were paid during the year.

Further application money Rs. 110-8-0 towards 10 new shares of Surat Electricity Co., Ltd. and one share of right was also paid during the year. Rs. 1,816-4-0 were spent during the year towards cost of 3% Government Securities 1966—68 worth of Rs. 2,000.

<i>This leaves the following balance:</i>	Rs.	A.	P.
Cash with Lloyds Bank Ltd. ...	2,414	2	9
Investments at cost ...	7,108	6	6
On account of the Indian Journal of Otolaryngology ...	3,007	8	0

Our association has been registered with the Charity Commissioner.

May I once again request various provincial and state branches to claim their quota of money. It becomes extremely difficult for me to send the amount without knowing to whom to direct the cheque. The donation list is open and the Honorary Treasurer will be grateful for any contribution towards the same.

R. A. F. COOPER.

A LETTER FROM THE EDITORIAL SECRETARY

Dear friends,

As you are aware a new editorial board has replaced the previous one and the address of the office of the journal has also changed. We are endeavouring to give a new look to the journal which we hope you all will appreciate. Any suggestions in this respect are most welcome. This, being the official scientific journal of our Association, I need hardly say that one and all of you must actively co-operate and help us in making this a great success. I would particularly request all members to send us some original articles and observations of their particular experience in their respective fields. Abstracts from other journals which any member may feel as useful are most welcome. As you know, the issues of our journal are published during the months of March, June, September and December of each year so that contributions should reach us sufficiently in advance.

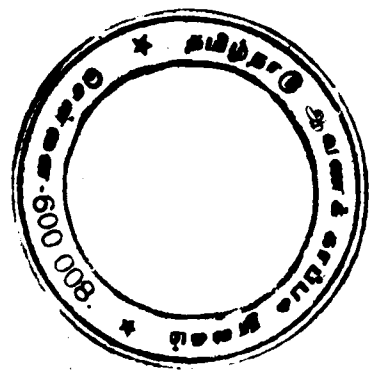
Every effort is made to see that the copies reach the members by the end of the month in which an issue is published, but it is just possible that either the copy is delayed or may not reach due to no fault of ours. In order to obviate this possible mishap, may I request every member of the Association of Oto-Laryngologists of India, to let me know their correct and complete address (as well as changes as soon as they occur) so that we may make the alterations in our despatch register specially kept for the purpose. I shall also greatly appreciate immediate information of any non-receipt of any particular issue so that arrangements can be made to send the same.

A few copies of the back numbers are available and if any member wishes to have them, I shall be glad to furnish particulars.

The Secretaries of the different branches are requested to send us the notes on their respective activities each quarter for being incorporated in the journal.

And a word to the contributors. Please scrutinise your manuscripts for any mistakes in typing and let us know how many copies of reprints you wish to have.

U. ANANDA RAO.



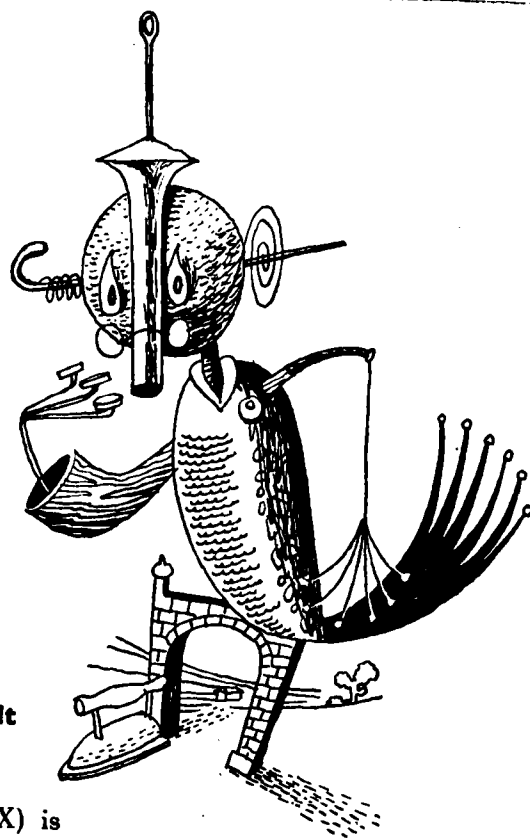
Is this too difficult
to swallow?

Is this illustration too difficult
to swallow? It probably is—

But our Vitamin A + D (DUMEX) is **CERTAINLY EASY** to swallow. Vitamin A + D Oil (DUMEX) contains Vitamin A and Vitamin D in an odourless and pleasantly flavoured oil medium and Vitamin A + D Pills (DUMEX) are sugar-coated. This, as you will appreciate, makes Vitamin A + D (DUMEX), both oil and pills, preparations of choice in the treatment of Vitamin deficiencies, *in infants particularly*; they are also useful for prophylaxis and as a body builder.



DUMEX LIMITED WAVELL HOUSE, BALLARD ESTATE, BOMBAY-1



VITAMIN A + D PILLS

Each Pill contains:

Vitamin A 10,000 I.U.

Vitamin D 1,000 I.U.

Bottles of 20, 100, 1000

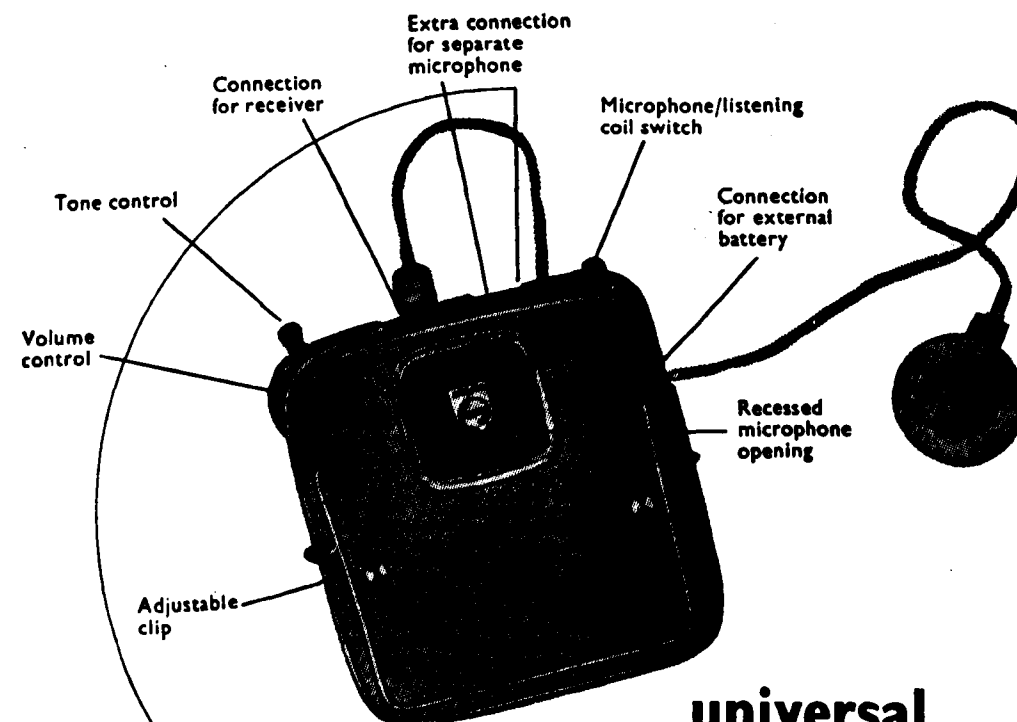
VITAMIN A + D OIL

Each ml. contains:

Vitamin A . . . 12,500 I.U.

Vitamin D . . . 2,500 I.U.

Dropper bottles of 15 ml.



PHILIPS universal 4-transistors HEARING AID

The Philips Transistor Hearing Aid type KL5500 has the following exceptional features:

1. Practically no case noise produced by the rubbing of clothes over the casing.
2. Minimum back ground noise.
3. Low current consumption—special circuitry enables the entire battery power to be utilised.
4. Completely tropic—proof—special stabilising circuits prevent temperature influences.
5. Separate switch and volume control.
6. Three position tone control.
7. Adjustable symmetrical limiter for personal adaptation.
8. Built-in sensitive feroxcube coil for telephone conversation.
9. Light-weight, handy and compact.
10. Can be worked with 3 mercury cells for advanced hard-of-hearing cases.
11. Air conduction and bone conduction available.
12. Guaranteed for one year against manufacturing defects.

PRICE: Rs. 400/-

JAYA SURGICAL COMPANY

41, GUINDY ROAD, MADRAS-15

★

Manufacturers of all kinds of
SURGICAL INSTRUMENTS AND HOSPITAL FURNITURE,
OPERATION TABLES, HIGH PRESSURE STERILIZERS ETC.

Specialists in the manufacture of all the latest

**THORACIC AND CARDIAC
AND E.N.T. INSTRUMENTS**

★

SPECIAL TERMS TO NURSING HOMES AND MEDICAL MEN.

*Protein
Biscuits*

INTRODUCING

VITAL PROTEIN
AS DIETARY SUPPLEMENT
IN

AN EXCEEDINGLY PLEASING AND CONVENIENT FORM

THREPTIN BISCUITS

The Palatable

PROTEIN - CARBOHYDRATE - B-VITAMINS
FOOD

IN CRISP AND DELICIOUS BISCUITS

ACCESSIBLE EVEN TO LOWER INCOME GROUPS

CONTENTS PER OUNCE: (6 biscuits): Protein (intact casein) 50%. Carbo-
hydrate 30%, Thiamine & Riboflavine 1 mg. each, Fat 7.5%. Flavouring Agents q. s.

Particulars from:

Available in 1 lb. tins

RAPTAKOS, BRETT & CO., LTD., WORLI - BOMBAY.

UNI-FERON

Saccharated iron Oxide 100 mg. in 5. c. c.
for iron deficiency anaemias, anaemias
of pregnancy, preoperative
conditions.

★

UNI-VITE (DROPS)

Vitamin deficiencies in general, parti-
cularly for ladies & children.

★

UNI-B-COMPLEX C

Water soluble vitamins in Therapeutic
dosage particularly useful in Diabetic
neuritis, Typhoid and other toxic
fevers and in post operative
conditions.

★

UNI-B-TWELVE (Parenteral)

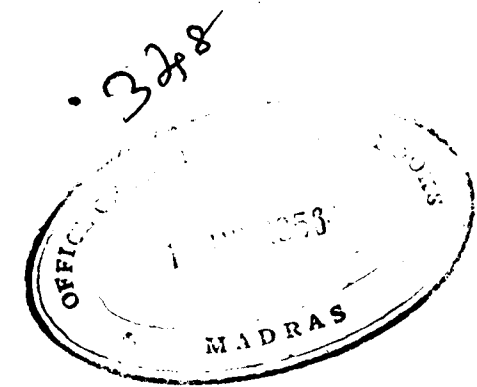
Vitamin B 12, 15 micrograms with
Vitamin B-Complex factors per
c. c. for Pernicious anaemias,
nutritional and other
types of macrocytic
anaemia.

★

UNICHEM LABORATORIES, BOMBAY 26.

Vol. VIII, No. 2

JUNE 1956



INDIAN JOURNAL

OF

OTOLARYNGOLOGY

218
3-56



PUBLISHED BY

The Association of Otolaryngologists of India

Printed by Mr. R. Ravaimanickam, at Ravai & Sons (Ravai Press) 148, Big Street,
Triplicane, Madras and Published by Dr. V. S. Subramanian,
1-A, Marshall's Road, Egmore, Madras-8.

ADVERTISEMENT TARIFF

		<i>Full Page</i>	<i>Half Page</i>
		Rs.	Rs.
BACK COVER PAGE	...	200/-	Not available
INSIDE COVER PAGE	...	125/-	75/-
FULL ORDINARY PAGE	...	100/-	65/-

★

10% Discount if paid in
Advance for 4 insertions

★

Address all correspondence to:

THE EDITORIAL SECRETARY

Indian Journal of Otolaryngology

1-A, Marshall's Road, Egmore, Madras-8.

INDIAN JOURNAL

OF

OTOLARYNGOLOGY

Vol. VIII, No. 2

JUNE 1956

Official Scientific Journal of the Association of
Otolaryngologists of India

Editorial Board

Chairman: Dr. TULSI DAS

Editor: Dr. V. S. SUBRAMANIAN

Treasurer: Dr. C. M. LEELAVATHY

Editorial Secretary: Dr. U. ANANDA RAO

INDIAN JOURNAL OF OTOLARYNGOLOGY

LEMPERT HOSPITAL

1-A, MARSHALL'S ROAD

::

EGMORE, MADRAS-8

INDIAN JOURNAL OF OTOLARYNGOLOGY

MEMBERS OF THE EDITORIAL BOARD

Delhi Branch	... Dr. S. N. Kaul
Trivandrum Branch...	Dr. Kurien George
Amritsar Branch	... Dr. G. M. Taneja
Visakhapatnam	... Dr. B. Tirumala Rao
Calcutta Branch	... Dr. N. Banerjee
Hyderabad Branch	... Dr. A. B. N. Rao
Patna Branch	... Dr. P. N. Sinha
Madras Branch	... Dr. T. S. Shetty
Bombay Branch	... Dr. L. H. Hiranandani

CONTENTS

	Page.
Medical Aspects of Hearing Loss and Its Surgical Treatment ...	57
Dr. C. M. Leclavathy, M.B., M.S., D.L.O. (LOND.)	
My Experience of Fenestration ...	66
Dr. R. A. F. Cooper.	
Studies on Respiration ...	74
Dr. H. D. Singh & D. V. S. Reddy.	
A Case of Rhinosporidiosis affecting the naso-lacrymal duct ...	81
Dr. H. Hazra, M.B. (CAL.), F.R.C.S. (EDIN.), D.L.O. (LOND.) and Dr. M. C. Misra, M.B.B.S. (PATNA), D.O.M.S. (LOND.)	
Lingual Goitre ...	85
Dr. P. N. Sinha, M.B.B.S. (PAT.), D.L.O. (LOND), D.O.M.S. (LOND.)	
Association Notes ...	92

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 Editor, Indian Journal of Otolaryngology, Lempert Hospital, 1-A, Marshall's Road, Egmore, Madras-8.

with a single prescription

with little added cost to the patient

- ... increase resistance to infection
- ... facilitate tissue repair
- ... augment production of antibodies
- ... hasten defervescence
- ... avert complications
- ... shorten convalescence

NEW!

Terramycin SF*

BRAND OF OXYTETRACYCLINE WITH VITAMINS

CAPSULES 250 mg.



specific combined therapy against infections
to combat pathogenic organisms
to fortify body defenses

The usual daily dosage (4 capsules) provides -
1 Gm. of the antibiotic, Terramycin, as well as specific vitamins in a
recommended minimum daily dosage needed during infection.

FORMULA:

Each Terramycin SF Capsule contains 250 mg. of Terramycin-plus

Ascorbic acid, U.S.P.	75 mg.	Pyridoxine hydrochloride.....	0.5 mg.
Thiamine (Mononitrate or Hydro- chloride)	2.5 mg.	Calcium pantothenate	5 mg.
Riboflavin	2.5 mg.	Vitamin B12	1 mcg.
Niacinamide	25 mg.	Folic acid	0.375 mg.
		Menadione (vitamin K analog)	0.5 mg.



THE ORIGINATOR OF ANTIBIOTIC THERAPY WITH SPECIFIC NUTRITIONAL FORTIFICATION

Pfizer Eastern Corporation
NEW YORK, PANAMA & BRUSSELS

Exclusive Distributors in India:

RAYDON PHARMACEUTICALS LTD.
POST BOX NO. 1438, BOMBAY 1; 'Grooms' BAYVIEW

* Trademark of Chas. Pfizer & Co. Inc.

STORZ

SPECIAL PRECISION E.N.T.-INSTRUMENTS

Of Superior Quality—Made in W.-Germany

Dr. ROSEN's Instruments for the Mobilisation of the STAPES.
Storz's Fenestration Instruments Set according to Lempert.
Lempert's Binocular Loupe/Head Lights for the same.
Kasche-Storz Binocular Loupe with light in the centre.
Optical Bronchoscope and Oesophagoscope according to Broyle and Schindler's.
Optical Oesophagoscope of Storz.
Nasopharyngoscope with antroscope with or without device for coagulation.
Modern E.N.T.—Lamps.
Transformers with and without cautery.

All Manufactured by: **M/s. Karl STORZ.**

Also available Set of Instruments for Tympanoplastic according to Prof. Zoellner, Freiburg.

Apply to: **M/S. THOMAS SUCK**

P. O. Box 1414

Factory-Representative

BOMBAY-1

Immediate
Hematopoietic
Response

Hepafolin

THE MOST POWERFUL
ANTI-ANAEMIC
REMEDY

HEPAFOLIN is an ideal preparation containing
Liver Extract, Vitamin B12 and Folic Acid, in a
well balanced, judicious combination.
HEPAFOLIN offers to the medical profession a
most reliable treatment for all types of anemia.

Each c.c. contains:
● LIVER EXTRACT EQUIVALENT
TO 500 G. FRESH LIVER ORALLY.
● FOLIC ACID 5 mg.
● VITAMIN B12 25 mcg.



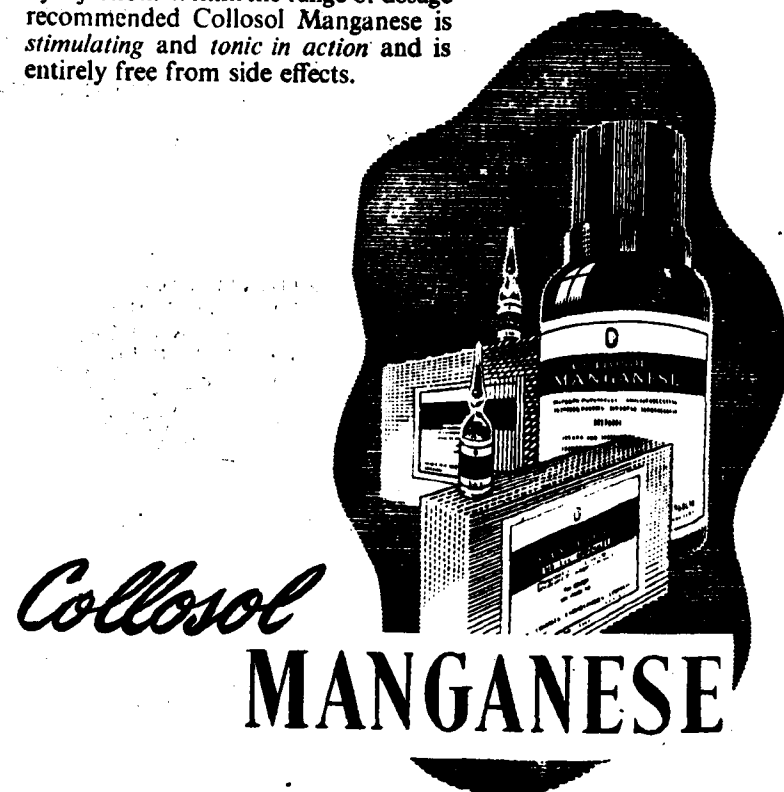
Gipla

BOMBAY-8.

BWARE OF IMITATIONS

An effective Anti-Bacterial Agent

Collosol Manganese has been widely and successfully used by the Medical profession for the successful treatment of staphylococcal conditions for over 30 years. Used alone, or in conjunction with penicillin, it is invaluable in the treatment of boils, for it lowers the relapse rate significantly. Collosol Manganese may be administered orally or by injection. Within the range of dosage recommended Collosol Manganese is *stimulating and tonic in action* and is entirely free from side effects.



THE CROOKES LABORATORIES LIMITED (Incorporated in England)
COURT HOUSE · CARNAC ROAD · BOMBAY 2

Antex

Serum Gonadotropin; produces ripening of the follicles in human ovary; stimulates spermatogenesis.
Box of 3+3* ampoules, 300 I.U. each
Box of 5+5* ampoules, 3,000 I.U. each

Physex

Chorionic Gonadotropin; produces luteinizing effect in human ovary; stimulates interstitial cells of testes.
Box of 3+3* ampoules, 250 I.U. each
Box of 3+3* ampoules, 500 I.U. each
Box of 3+3* ampoules, 1,500 I.U. each

DUMEX

offers a full range of sex hormones,
both primary and secondary.

Andronex

Synthetic male hormone, Testosterone; useful where stimulation therapy with gonadotropin proves ineffective.

Injection: Box of 3 x 1 ml. ampoules, 25 mg. Testosterone Propionate per ml.
Tablets: Bottle of 20 tablets, 10 mg. Methyl Testosterone per tablet.

Estronex

Synthetic folliculoid female hormone, Estradiol; useful in hypogonadism, amenorrhoea, metrorrhagia, functional sterility, etc.

Injection: Box of 3 x 1 ml. ampoules, 5 mg. Estradiol Dipropionate per ml.
Tablets Plain: Bottle of 20 tablets, 0.01 mg. Ethinyl Estradiol per tablet.
Tablets Forte: Bottle of 20 tablets, 0.05 mg. Ethinyl Estradiol per tablet.

Lupronex

Synthetic luteoid female hormone; useful in gynaecological lesions in which endometrium has to be brought from proliferative into secretory phase.

Injection: Box of 3 x 1 ml. ampoules, 10 mg. Progesterone per ml.
Tablets: Bottle of 20 tablets, 10 mg. Ethisterone per tablet.

* accompanying ampoules of solvent



Details from:
DUMEX PRIVATE LIMITED
WAVELL HOUSE
Ballard Estate
BOMBAY-1

Indian Journal
OF
OTOLARYNGOLOGY

Vol. VIII, No. 2

JUNE 1956

OFFICIAL SCIENTIFIC JOURNAL OF THE ASSOCIATION OF OTOLARYNGOLOGISTS OF INDIA

Medical Aspects of Hearing Loss and
Its Surgical Treatment

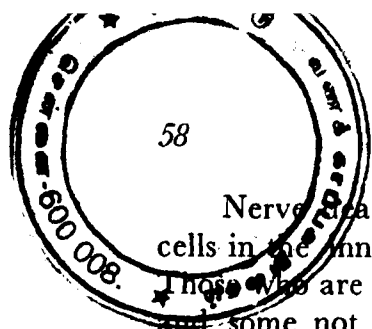
BY

Dr. C. M. LEELAVATHY, M.B., M.S., D.L.O. (LOND.),
*Professor of Ear, Nose and Throat Diseases, Madras Medical College
and E. N. T. Surgeon, Govt. General Hospital, Madras.*

The time-honoured classification of deafness or hearing loss into conductive and nerve types has not only the advantage of understanding the working of a damaged ear but also has the advantage of predicting the future course of the disease. Conductive deafness, especially its early stages can often be arrested, improved or circumvented. Nerve deafness, which implies degeneration of delicate but essential elements of the sense organ or nerve can rarely be improved by medical treatment. This type of deafness is also less favourable than conduction deafness for the satisfactory use of a hearing aid.

Conduction deafness may be caused by plugging the external auditory meatus, by damping the free movement of the drum or restricting the movements of the ossicles. Any of these will reduce the intensity of the air-borne sound that finally reaches the internal ear.

Conduction deafness is not much of a handicap to hearing in a noisy place. The loud speech of the speaker overrides a moderate conduction deafness and this ability to hear in noisy places as well as or better than normal persons (*Paracusis Willisii*) is characteristic of conduction deafness.



Nerve deafness is caused by a degeneration of the sensory cells in the inner ear and the hearing loss is usually uneven. Those who are afflicted with it hear some tones well, some poorly and some not at all. High tones are the ones most likely to be lost.

It is a curious fact that although the nerve deaf may not be able to hear the high tones at all when the tones are faint, they are able to hear the really powerful high tones just as loudly as any one else. The transition from hearing little or nothing to hearing very well is abrupt. With nerve deafness the range of comfortable hearing between the inaudible and the too loud, the tone in which we like to listen is greatly narrowed. This effect of abnormally rapid increase in loudness is known as *recruitment* and it may be very annoying. Recruitment is the condition where faint or moderate sounds cannot be heard, while at the same time there is little or no loss in the sense of loudness of loud sounds. It explains why old people whose deafness is usually a gradual high tone nerve type, complain one moment that they cannot hear a speaker and the next moment, when he raises his voice, that he is shouting too loudly at them. Recruitment, then showing itself as a normal hearing of, and intolerance for, loud sounds, is a distinguishing feature of nerve deafness. Recruitment is one of the reasons why tolerance for a hearing aid is harder to acquire when the deafness is of the nerve type.

The important causes of conduction deafness are:

- (1) Inadequate treatment of infection of the middle ear and inadequate attention to normal function of the Eustachian tube.
- (2) Otosclerosis.

Medical Treatment of the Middle Ear Diseases.—Inflammation of the middle ear is the commonest cause of conduction deafness. In acute otitis media without exudation, general treatment with antibiotics and chemotherapy combined with inflation, once the acute condition subsides, and attention to the source of infection

are all that may be necessary. In exudative type with or without suppuration, drainage is the most effective method of getting rid of the infection. It has been found that deafness and mastoiditis are more common after spontaneous rupture of the drum than after surgical incision. It is a curious paradox that chemotherapeutic drugs which in competent hands have minimised to a large extent the scourge and sequelae of acute otitis media in the early part of the last decade have themselves been increasingly contributing to the incidence of deafness. The treatment of acute otitis media is often undertaken by the patient himself or by a druggist whose criterion of cure is the subsidence of pain. These cases due to the inadequate dosage of the drug administered for a pitifully short period regress into a chronic stage and it is such recurrent, subacute or chronic types of otitis media that culminate in deafness of varying degree.

Chronic Otitis Media.—All those who suffer from chronic otitis media, be it suppurative, non-suppurative or adhesive type have defective hearing. Though they may consider their hearing normal, on close questioning, the patients admit, of being aware of some diminution in the acuity of hearing. Since this condition is regarded as the result of an untreated or inadequately treated acute otitis media or the result of recurring secondary infection of the tympanic cavity as a sequel of acute otitis media or the response of an ear with a cellular mastoid to an infecting organism, the ultimate result—interference with function—is the same in every case. Hence prevention of this condition is the ideal to be aimed at. Once the infection is controlled, some patients hear better while others complain that their hearing has gone worse. In the latter case, it may be the result of the tympanic membrane getting adherent partly or wholly to the medial wall of the middle ear thus interfering with the ossicular mobility; or it may be the result of an unhealed perforation. In cases of adhesive conditions, one of the following treatment may be adopted with success. (1) Inflation (2) Hearing aid and (3) Fenestration.

Inflation, you will agree with me is a tedious process and the results uncertain. However, we have had satisfactory results in some cases.

Hearing aid has been useful in a good number of cases. Fenestration was resorted to only in two cases and in both the results are good.

In cases of unhealed dry perforation we have been attempting surgical repair by one method or other. Two such cases require special mention. One, in whom the escape of air through the ear whenever he blew the nose started causing alarming psychic disturbance, something had to be done. The perforation was closed by the blood clot method and the result appeared to be satisfactory for all concerned. Within a few weeks, however, this gentleman requisitioned the services of a professional wax remover, the "expert", who perhaps has made the largest single contribution to an increase in the deafness rate in India, and came back to us with his original complaint. Another was a woman in whom we tried the amniotic membrane and found that the perforation had closed and hearing improved. I fully realise that success in these stray and isolated cases means nothing much. I am only trying to emphasise that these procedures have a place in selected cases to prevent external infection and give better hearing particularly in patients in whom a prosthesis cannot be given.

Inadequate Attention to Normal Function of the Eustachian Tube (Barotrauma).—The problem of altered air pressure in the middle ear cavity has claimed much clinical interest. A common experience is a feeling of pressure in the middle ear as the atmospheric pressure is changed. Such a change occurs most often from variations of altitude, the outside air becomes less dense and the air within the middle ear cavity tends to expand, pushing outward on the drum membrane. As we lose altitude this process is reversed, the denser air then pushes inward on the drum. In either case we perceive the effects as pressure sensations in the ear and also as impairment of hearing. Usually these

sensory effects are slight and transitory because during swallowing the Eustachian tube opens and permits an equalisation of the pressure in the middle ear cavity. Continuous swallowing on descent will with partially blocked tubes help to equalise the pressure. Inflation of the tube may be required in severe barotrauma. With exudation, incision of the drum may be necessary. The best way to avoid severe barotrauma is not to fly while suffering from a cold because cold inflames the tissues at the mouth of the E. tube and prevents its proper function. Casual treatment of an initial lesion may allow progression of tissue changes causing irreparable damage to the middle ear, which may develop permanent hearing loss.

Prevention of Otitis Media by Surgery and Radiation.—Surgical removal of the adenoids that block the Eustachian tubes prevents the recurrence of otitis media particularly in children. Surgery has to be often supplemented by irradiation. The lymphoid tissue over the mouth of the E. tube may be treated with radium or X-ray therapy and a small dosage will often shrink the lymphoid tissue, restore proper function of the tubes prevent further otitis media and the development of deafness. If proper containers for radium are not available, X-ray therapy is instituted. Successful use of irradiation therapy depends on correct diagnosis, correct dosage and proper positioning of the applicator.

Otosclerosis.—Is a unique condition affecting the bony capsule of the inner ear. The usual site is the oval window. Sometimes the cochlea itself is involved and a nerve deafness develops. This condition according to our statistics in the Hard of Hearing Clinic of the General Hospital, Madras is 204 (147 males and 57 females) out of 700 cases investigated for deafness, giving a percentage of 29.1 of clinical otosclerosis—2.5% being males and 1% females. This predominance in males peculiar to this country may be due to two reasons. (1) It may be that men present themselves in larger numbers for examination and treatment or (2) It may be that in our country more men than women are affected.

The chief points on which a diagnosis of otosclerosis is made are:

- (1) A progressive loss of hearing particularly in young people.
- (2) A history of deafness in the family.
- (3) No previous history of infection of the ear that might account for hearing loss and
- (4) Normal ear drums.

Audiograms show that the hearing loss for airborne sounds is about equal for all frequencies.

Since the deafness in early stages is a conduction deafness, hearing aid is beneficial. As there is a possibility that nerve deafness may also develop, the study of speech reading is a very desirable added precaution.

Fenestration is the operation of choice. This operation is decided by the answers to four important questions from the point of view of the patient.

- (1) For what kind of deafness is it suitable?
- (2) What are its discomforts and dangers?
- (3) What are the chances of success?
- (4) How permanent are the benefits?

The operation is ideally suited for conduction deafness. Patient may have some temporary discomfort; there is a remote danger of losing the hearing in the operated ear entirely; danger to life is practically negligible.

Chances of success increase with the suitability of the cases operated on.

The last question, How permanent are the benefits? cannot always be answered with certainty. If the newly made fenestra

gets closed again, the hearing gain will obviously be lost. Further, the operated ear is likely to develop nerve degeneration that so often appears in the later stages of otosclerosis.

In all, 30 cases of conduction deafness were treated with fenestration. Of these 60% have maintained the improvement up to this day. As to the positive conclusion regarding the lasting improvement of hearing even in ideal cases we are still doubtful.

In addition, as a result of repeated requests from the patients, two not-so-ideal cases were operated on with fairly good results. The patients were pleased with the results and we believe we have been able to restore them to a state of social adequacy. It is impossible to predict the future course, in spite of the fact that they have maintained the improvement for a period of six months. With due apologies I wish to point out that even the not-so-ideal cases have a place for effective surgical treatment.

Medical Problems of the Inner Ear.—After the age of 40 as a result of some atrophy of the organ of corti and of the auditory nerve, the nerve or perceptive deafness is very common. Sclerosis of the artery to the cochlea may be the chief cause. Other causes are: injury, drugs—especially streptomycin, meningitis, influenza, mumps, small pox, continuous noise and prophylactic use of antitoxin. It is interesting to note in this connection, that it is not all those who get themselves exposed to the above conditions, become deaf. It may be that some people are more susceptible than others. How are we to detect the susceptibility of an individual? The question remains unanswered. Prolonged and careful statistical studies and planned experimentation alone can provide the answer.

Congenital Deafness.—In medical records one finds that all cases of nerve deafness are classified as congenital. This is not always correct. The child might have become deaf as a result of meningitis or some other disease which has destroyed the sense of hearing before the child has learned to talk. However, there

are cases of babies born deaf or born with a hereditary tendency for the sense organ of hearing and the auditory nerve to degenerate at an early age without any apparent cause. The specialised cells of the sense organ once degenerated cannot be regenerated and their function cannot be taken by any other nerve or sense organ. A few conditions likely to cause congenital deafness and which may be prevented are:—

- (1) Rhesus Incompatibility.
- (2) Consanguinity.
- (3) Syphilis.

Rhesus factor producing congenital deafness has evoked considerable interest recently. However in a few cases of congenital deafness investigated by us, not a single case could be attributed to rhesus incompatibility. This is not surprising, for, according to Madras statistics 98% of the people of this country are Rh positive. Nevertheless the possibility has always to be borne in mind.

Consanguinity as a cause of congenital deafness is of special significance to us. In the course of one year we have seen two families—husband and wife being first cousins—affected with this disability. In one, the only child was deaf; in another, three children otherwise healthy were all deaf. Consanguinity by itself does not give rise to developmental defects. What it does is to increase the chance of two abnormal recessive genes coming together so that there is increased chances of developmental anomalies becoming manifest in the offspring of such a marriage. Mygind has reported that 23% of deaf mutes were offsprings of consanguineous marriage. Deaf mutism is common among Jews as consanguinity is common amongst them.

Syphilis.—Congenital or acquired syphilis can produce deafness. Congenital type can produce early or late symptoms. Early condition occurs before the child begins to speak and a variety of deafmutism is thus produced. Late symptoms occur as late as 40 or 50 years. Late congenital type affects young

women particularly and is often accelerated by pregnancy. A positive fistula test with an intact normal drum is a distinctive sign. The pathology is gummatous softening of the capsule, gummatous penetration of the bony canal and gummatous infiltration of the stapedial ligament producing abnormal mobility. This disease is particularly resistant to antisyphilitic therapy, and may even progress rapidly to profound loss of function during intensive treatment. Treatment with ACTH and penicillin in early stages appears to offer some prospect of improvement. Of the acquired variety, secondary or tertiary stages only are important from the point of view of causation of deafness. Eighth nerve may be involved within a week of the primary sore or its involvement may be delayed for many years after the onset of the tertiary stage. The hearing loss in either condition is mostly of the perceptive type. No specific type of hearing loss and typical audiogram can be produced as evidence.

Comment.—At a time when the nation is straining very hard to dispose of its man power to the best advantage any preventible disease which limits the usefulness of the community should assume importance. The loss of these otherwise healthy men and women is a reality which is obvious to those who have opportunities of examining the working class people.

Summary.—The common causes of hearing defects are presented and the importance of prevention stressed. The medical and surgical aspects of the treatment are briefly discussed.

My Experience of Fenestration*

BY

Dr. R. A. F. COOPER (Bombay).

The subject matter of today's paper "Fenestration Operation" is designed to improve hearing where deafness is due to otosclerosis. In otosclerosis the bony box (Labyrinth) enclosing the organ of hearing is gradually covered with patches of new spongy bone. This new bone does not itself cause any trouble at all but if and when it spreads to the oval window and particularly to the annular ligament round the foot-plate of the Stapes deafness starts.

The amount of hearing loss depends largely on the extent to which the Foramen ovalis (oval window) is covered by the new spongy bone. As this spreads deafness grows worse, and the rate at which this happens varies from person to person, in some it may remain stationary for years, in others there is a slow decline in hearing, while in few hearing loss may be appreciably marked within few months. There does not seem to be any particular reason why this otosclerosis should arise, except that in large number of cases there is a similar sort of deafness in one or more members of the family. In my series of 378 cases seen within a period of four years - 98 patients had history of similar deafness in one or more members of the family.

This operation re-establishes the normal physiology of hearing apparatus, disorganised by the impediment to air borne sound. Of the different theories of how Fenestration operation helps to restore normal hearing in cases of otosclerosis one advanced by Julius Lempert in 1938 of "improved mobilisation of both perilymph and endolymph by air borne sound was responsible for improvement in hearing obtained following fenestration surgery" has stood the test of time. Wever and Lawrence have

later confirmed by their experimental study in the rhesus monkey that the fenestration operation as we have seen affects a remobilisation of the cochlear fluids.

From the end of 1951 until today 378 cases were examined by me for hardness of hearing excluding the acute ones. All cases even including those attending public hospitals where I am working, were examined by me personally at my rooms both clinically and audiometrically. Operated cases came for periodical check up and repeated audiographic tests were carried out wherever it was possible. Of the 378 cases 273 were males and 105 females. In the group of 167 cases of genuine clinical otosclerosis the proportion of male to female was 2.7: 1. This appears to be contradictory to the established statistics in foreign countries where the proportion of females preponderates over that of males in this disease. Probably in this country females are rather shy of coming forward for treatment for this disability. 200 were between the ages of 20 - 40 years, 126 were over 40 years of age, while those below 20 years of age were 62.

The duration of disease varied from anywhere between 2 to 12 years. 77% complained of bilateral hearing impairment. I found it extremely difficult to eliminate from patients the progressive nature of the deafness even in cases of genuine clinical otosclerosis because of psychological reasons. In females history of further deterioration in hearing level following each pregnancy was inquired into and practically every female in child bearing age confirmed this. Paracusis Willisii was present in 27% of my cases and I am yet to be convinced that this sign is clinching of the diagnosis of otosclerosis. Tinnitus was present in 62% of cases. This did not disappear after fenestration operation in a large number of my cases until following Rosen, I started deliberately cutting the Chorda Tympanii Nerve. History of Vertigo, drugs and past illnesses often helps to simplify and guide the clinical findings. When there is history of repeated bouts of discharge from the ear, particularly in this country one must remember the possibility of mycotic infections

*Read at the Eighth Annual Conference of Association of Otolaryngologists of India.

of External ear which are of common occurrence. I have come across a good number of cases in this series where patients with genuine clinical otosclerosis were subjected to removal of Tonsils and adenoids, S.M.R. operation, repeated and persistent Eustachian Catheterisation until the drums reached flapping stage and lastly nasopharyngeal irradiation.

On examination one found many of these patients highly strung as in spite of being apparently normal they could not enter society. These made bad subjects for operation. In spite of marked improvement they gain in hearing after fenestration operation, also subsequently confirmed by audiograms and near relatives, they refuse to acknowledge the benefit obtained. I would here mention of two highly educated upcountry ladies who in spite of having regained and maintained until now a period of 3 years a very good hearing (average loss now for air-borne sound being between 10 - 15 decibel level) refuse to be convinced of it though their parents and other relatives confirm the marked improvement obtained. I must say at this stage that often I did not find functional improvement tallying with audiographic one and sometimes *vice versa*. The patients' soft and low pitched voice which one notices prior to the operation does not necessarily reach its original pitch and timbre after the operation. Only about 15% of operated cases in my series regained the predisease level. I attach quite a lot of importance to tuning fork tests. I personally think this should precede the audiographic one, to keep clear of prejudice once the audiograph is taken one gets biassed as to the type of deafness. A fair amount of information about cochlear damage could be obtained by even tuning fork alone. The usual audiographic examination for both pure tones and speech follows. Following Mr. Cawthorne I classify my cases into suitable, border line and unsuitable ones, depending upon decibel loss to air-borne sounds and cochlear damage. Speech audiogram helps to obtain information about dormant cochlear reserve and particularly in cases of mixed deafness it helps one to judge the prognosis. In spite of audiographic tests I make it a point to establish patient's

range of hearing of voice at normal conversational level by either ears as that simplifies my explaining to him the amount of benefit he is likely to receive after operation in terms of distance in feet from a speaker, the voice again being normal conversational level.

I follow the same indications given in classical text books for this operation except that now I am rather reluctant to operate on highly strung patients. It has been my experience that prognosis is favourable in patients who can tolerate amplifier and feel comfortable to amplified voice prior to operation.

In the series under review out of 378 cases of hardness of hearing 167 were found to be of genuine clinical otosclerosis 133 were of perceptive deafness, 57 were of the mixed variety while in 23 the deafness was due to some other extraneous causes.

I have performed all operations under general anæsthesia-Intravenous Pentothal for induction followed by gas, oxygen and Ether. As the anæsthetists in this country have still not taken to administration of hypotensive drugs, as much as I would have enjoyed operating patients under the effect of these drugs I have yet not been able to accomplish that.

The involvement of either side was even. The operation of my choice is Lempert's endaural one-stage fenestra nov ovalis. I follow the technique adapted by Mr. Terence Cawthorne of London. The time taken by me in the beginning was about 3½ hours-lately I have been able to cut it down to 2½ hours which also includes the time taken for skin grafting. I prefer Shambaugh's incision to Lempert's as I find in this there is less tissue damage. In early days I used to hitch up the posterior flap the thread loop passing behind the pinna to get more working space. Lately I have given it up as I found it formed a pocket of persistent discharge. I started with Cawthorne's retractors but lately I find Lempert's more convenient. I find it is more advisable to trim and thin the flap at early stage of operation rather than wait till the bone work is over because at

this stage one is less tired and hence one has enough energy and patience for this delicate bit of work. I am more accustomed to and also prefer to open up the mastoid antrum and air cells with gouges and hammer rather than trust electric drills. The proportion of sclerotic to pneumatoid mastoid was about 2 - 1. In a large number of cases I found dura pretty low enough to interfere while drilling the fenestra. In no case I had to abandon operation for anatomical abnormalities restricting the operative field. In one case because of narrow field I could not use microscope and even the drilling was done viewing through the loupe. It is very useful to clear up every single mastoid cell to avoid persistent infection later. I have found that the best way to avoid damage to the facial nerve is to go for it and identify it and while drilling burr should move away from the canal and not towards it. In one of my cases I caused partial damage to the nerve which took six to eight weeks to recover. Another case showed partial paresis on 3rd day which cleared up within 2 weeks. One should avoid using seeker to identify the aditus as often it displaces the incus and one has to grope for it before one could reidentify, because once shifted it takes up very unusual positions. In one of my cases this displacement was the cause of damage to the drum. In making the fenestra I prefer to follow Mr. Cawthorne who brings the canal up on a mount by drilling on either side and then with a gentle tap of a small sized gouge removes the dome. I have yet not reached this step to my satisfactory perfection. I have found microscope essentially helpful for this stage of operation. To avoid retention of bone dust and pieces of endosteal bone layer both microscope and running water are necessary. In spite of repeated efforts I am yet unable to adjust Shambaugh's irrigation and suction tubes. Sometimes with a very narrow field to work where dura is low and sinus far forward the flap is in danger of being torn during drilling. In these cases I always ask an assistant to keep the flap well out of way with a long flat flap elevator. This may sound childish but if one can avoid avulsion of one flap in a

hundred cases the precaution is worth it. The tympanomeatal flap fits well provided the facial ridge is sufficiently lowered. I still continue skin grafting of the rest of the cavity.

Complications During Operation :—So for I have torn flap about 4 times and damaged canal twice. In case of tear in the flap which is not reapproximable I substitute a split thickness skin graft from thigh which takes up well. In spite of damage to the canal one of the cases had remarkable improvement in hearing. In one case I damaged the transverse sinus while drilling and I could not proceed after packing because of a very narrow field, so I packed the cavity and stitched up the wound. After a week on removing the packing both from the cavity and the sinus I found the area healthy enough and so proceeded with making a fenestra. The patient had an uneventful recovery and markedly improved hearing. In one of my cases I found that the external semicircular canal was completely sclerosed and the membranous canal could not be traced. I wish I had tried to open up other canal. A tiny blood vessel lying between the external semicircular and facial canals has sometimes been damaged by me particularly at the last stage of drilling after the membranous canal was exposed. This is likely to ruin the prognosis but fortunately this has been quite rare. The best way to control oozing of blood from the bone is to use polishing burr over the area. The biggest bugbear I have come across is the discharge from the operated field in some cases persisting for quite a long period. This is not from the middle ear but is usually from the external auditory canal and fortunately it does not vitiate the result. I have found Neo-Cortef Ointment 1.5% a suitable remedy for the same.

In my series of 74 operations performed within a period of 4 years, 15 were over 40 years of age, out of whom 11 improved, 3 either improved and went back to original level of hearing or did not improve and one had further deterioration in hearing. In the age group of those between the ages of 30 and 40 out of 16 cases 12 improved, 3 remained stationary at preoperative level and in one hearing deteriorated further. In the age group

of those between 15 and 25 years, 45 were operated upon out of whom 35 improved, 7 remained where they were and two suffered from further deterioration. Out of a total of 74 cases operated upon 57 had improved hearing, 13 either remained stationary or had temporary improvement and four joined the group of unfortunate ones who had further loss in their hearing. This increased deterioration is not necessarily due to faulty technique. In some cases for no fault of operator labyrinth just refuses to hear the new way. Statistics could have been improved upon but in the beginning to train up a team I operated on even unsuitable cases. Lately, I select my cases, having a better assessment with a little experience at my back. Two of my cases both cooks who had practically total loss of hearing for conversational voice and total decibel loss for speech frequencies regained serviceable hearing and their audiograph showing average 25 decibel level loss for air borne sound and both could resume their jobs from which they were dismissed. Some of my patients noticed improvement in the evening of the operation day, to the extent, they could hear at a distance hospital buzzer (call bell), which they were not able to hear at all before the operation. These were the cases which showed and maintained well marked improvement later. My last but one case, a pregnant lady from Ahmedabad on whom I operated in her 5th month, gained a good hearing after the operation but lost it within 6 weeks. To my pleasant surprise only a fortnight ago I had a letter from her husband intimating me of marked improvement in her hearing and gratitude for the humble services rendered. One case from Patna had a congenital absence of one ear and the other ear with normal pinna was otosclerotic. Much against my wish I had to operate on her as she refused to wear Artificial Hearing Aid. Thank God patient had remarkable improvement in hearing which she has maintained up to date, a period of 3 years by now. Gentlemen, everything was not smooth sailing - I had kicks also. A Parsi lady from Pakistan who had marked improvement in hearing following operation within two weeks, suffered from total loss by the end of the month, which she has not regained. To ascertain their present state of hearing

I had sent a questionnaire to all my operated cases and the statistics given above are based on the answers received. Whenever possible I have tried to repeat the audiometric examination every 3 - 6 months.

If the operation succeeds and practical hearing is restored it means that most forms of speech and music can be heard sufficiently well for all ordinary purposes. If it does not succeed, then there is always the consolation of knowing that one can hear again with a good hearing aid.

I cannot end this paper without thanking members of Medical Research Council of London who were kind enough to select me for the first award from Alexander Piggot Wernher Memorial Trust and Mr. Terrance Cawthorne who helped me to learn this work. I am deeply indebted to Col. Wats and Dr. Tipnis, past and present superintendents of the Bombay Hospital for their kind co-operation in extending me the necessary facilities to carry on this work. I am also thankful to Dr. K. U. Shah, Dr. N. K. Apte and the resident anaesthetist at Bombay Hospital Dr. Mirchandani for their willing help without any obligation, as most of these were poor patients and were operated on free side.

Studies on Respiration*

EFFECT ON RESPIRATION OF AFFERENT IMPULSES FROM THE UPPER RESPIRATORY PASSAGES

BY

Dr. H. D. SINGH & D. V. S. REDDY,

Department of Physiology, Madras Medical College, Madras.

Respiratory reflexes from the upper respiratory passages are protective reflexes which guard the respiratory tract and depths of the lungs from harmful agents. Though in the clinics and hospitals many procedures are adopted, which somehow or other provoke reflexes from the upper respiratory passages, very little attention seems to have been paid to the origin, and function of these reflexes in human subjects.

These reflexes have been extensively investigated in dogs, cats and rabbits. It is well known that in the unanæsthetized animal stimulation of the nasal mucous membrane frequently induces sneezing - (Dukes 1947). Luciani (1911) states that chemical stimulation of the nasal mucosa induces sneezing while electrical excitation produces expiratory arrest. Stimulation of the mucous membrane of the pharynx, larynx and trachea, or of the nerves which supply these regions (the glosso-pharyngeal, the superior and the inferior (recurrent) laryngeal nerves) leads to inhibition of respiration in the expiratory position, and the well known inhibition of respiration during the second stage of the act of swallowing is due to afferent impulses arising in the pharyngeal mucosa (Ranson 1921).

Titelbaum and his co-workers (1934, 35, 36) found, in the unæsthetized cat that mechanical stimulation of the pharyngeal or pharyngo-palatine mucosa, by a cotton swab inserted through the mouth, usually causes acceleration of respiration, and in some

instance inhibition of respiration, and that cocainisation of the mucosa first abolishes the hyperpnoeic and then the inhibitory response. They showed that the pharyngeal accelerator response is mediated by the glosso-pharyngeal nerve, while the inhibitory reflex is mediated by the pharyngeal branches of the vagus nerve. They also observed that while stimulation of the central end of the glosso-pharyngeal nerve caused inhibition of respiration in the rabbit, the response in the cat was an increase in rate and depth of respiration. They found that stimulation of the pharyngeal branch of the vagus in the cat inhibits respiration while Knoll (1882) found that this had no effect in the rabbits.

Stimulation of the mucous membrane of the larynx in the unanæsthetized animal not only causes inhibition of respiration, but also powerful expiratory efforts (coughing). (Dukes 1947). The afferent paths of this cough reflex are the superior and inferior laryngeal nerves. (Lucian 1911). Foster (1895) states that stimulation of the superior laryngeal nerve always produces slowing or respiratory standstill, inhibition of inspiration being accompanied by contractions of abdominal muscles. Hammouda and Wilson (1939) observed that continuous stimulation of the superior laryngeal nerve in the lightly anæsthetized animal frequently produced acceleration of respiration, but stimulation of the nerve in the fully anæsthetized or decerebrate animal always resulted in the arrest of respiration in the expiratory position. Gesell and Hamilton (1941) report that faradic stimulation of the superior laryngeal nerve produces an expiratory response varying in degree with the strength of the stimulus and with the individual. The reflexes from the upper respiratory passages are considerably modified during anaesthesia, and probably when the individual is unconscious due to other reasons. (Schmidt 1938).

Present Investigation.—In this investigation, the reflexes from the nasal, pharyngeal and laryngeal mucosa were studied in dogs anaesthetized with chloralose, administered intravenously in doses of 10 c.c. of a 1% solution per Kgm. of body weight.

*A Paper read before the Physiology Section of Indian Science Congress, Agra, January 1956.

Methods of recording respiration.—A tracheal cannula was introduced into the trachea, and qualitative records of changes in ventilation were obtained by a modification of the technique described by Burn (1951). Costal and abdominal movements were recorded simultaneously with pneumographs strapped to the chest and abdomen, and connected to recording tambours. A detailed description of these techniques is given by Singh (1956.)

METHODS EMPLOYED FOR ELICITING REFLEXES

Nasal Mucosa.—(a) Mechanical stimulation: A cotton swab was inserted into the nostril and rubbed against the mucous membrane. (b) Chemical stimulation: 3 or 4 drops of ammonia solution were instilled in the nasal cavity with a dropper. (c) Electrical stimulation: The ala nasi was split with scissors, the nasal mucosa exposed and electrodes were applied directly to the mucosal surface and stimulated with faradic current. (d) Desensitisation of the nasal mucosa: A 2% solution of procaine Hydrochloride was applied to the nasal mucous membrane. The stimuli were applied again after desensitisation.

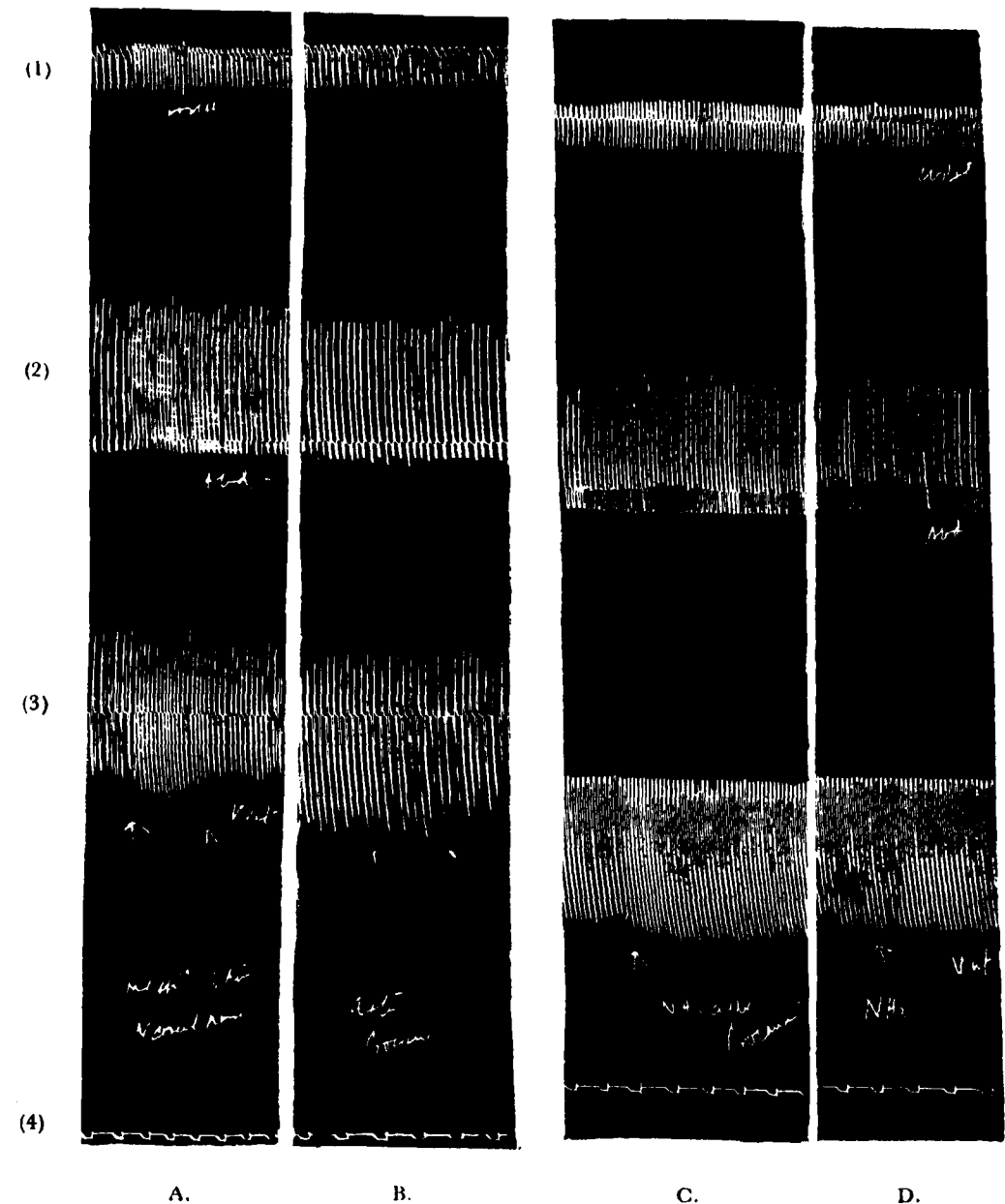
PHARYNX

1. A cotton swab was inserted into the pharynx through the mouth and was rubbed against the mucous membrane.
2. The pharyngeal mucosa was stimulated again after,
 - (i) Cutting the glosso-pharyngeal nerves, keeping the pharyngeal branches of vagus intact.
 - (ii) Cutting the pharyngeal branches of vagus, with the glosso-pharyngeal nerves intact.
 - (iii) Cutting the glosso-pharyngeal nerves and the pharyngeal branches of vagus.

LARYNX

1. An incision was made in the trachea, between the larynx and the point where the tracheal cannula is introduced. A cotton swab held with a bent forceps was introduced through this opening into the larynx and the mucous membrane was rubbed with the swab.

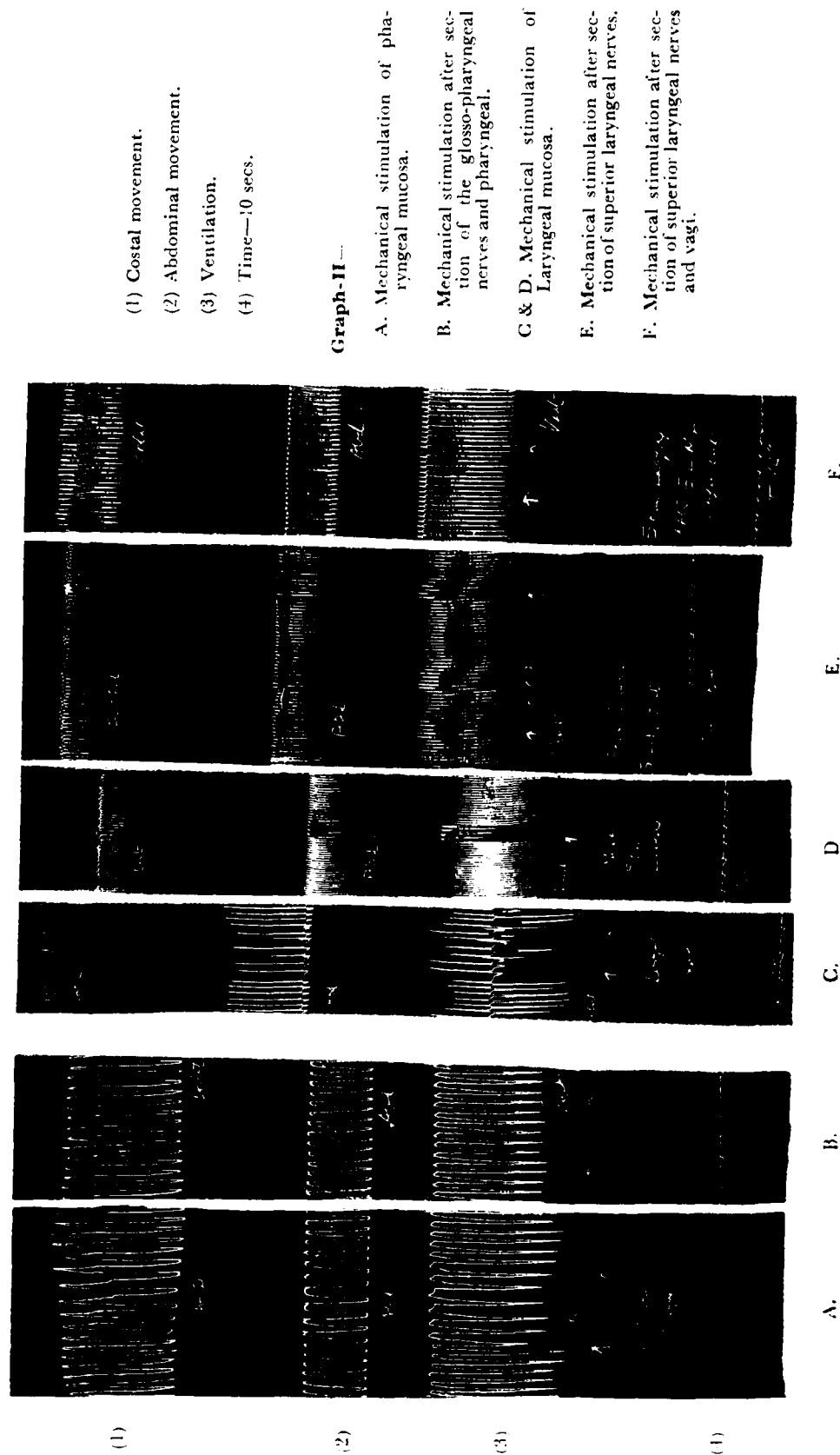
GRAPH—I



- (1) Costal movement.
 (2) Abdominal movement.
 (3) Ventilation.
 (4) Time—10 secs.

Graph-I—A. Mechanical stimulation of Nasal mucosa
 B. Mechanical stimulation after Procainization of mucosa.
 C. Chemical stimulation of Nasal mucosa.
 D. Chemical stimulation after Procainization.

GRAPH—II



The laryngeal mucosa was stimulated again after,

- (i) Cutting the superior laryngeal nerves.
- (ii) Cutting the vagi in the middle of the neck (to remove the influence of the inferior laryngeal nerve).
- (iii) Cutting the vagi in the middle of the neck, and also superior laryngeal nerves.
- (vi) After sectioning the vagi above the origin of the superior laryngeal nerves.

Stimulation of nerves.—The central ends of the cut glosso-pharyngeal nerve, pharyngeal branch of the vagus, the superior, and the inferior laryngeal nerves were stimulated with faradic current from an inductorium connected to Nife cell; shielded electrodes were used.

RESULTS

Nose.—Mechanical, chemical or electrical stimulation of the nasal mucous membrane produced an increase in rate and depth of respiration (Graph I-A & C). Sometimes there was acceleration without alteration in depth. The response was abolished after desensitization of the mucous membrane. (Graph I-B & D). (in one instance powerful expiratory efforts were obtained on strong faradic stimulation of the mucosa).

Pharynx.—Mechanical stimulation of pharyngeal mucous membrane caused slowing and reduction in ventilation. (Graph II-A) the costal and abdominal movements were however not reduced, and occasionally one or the other was slightly increased.

The response was not abolished by section of the glosso-pharyngeal nerves, or the pharyngeal branches of the vagus separately but was abolished by combined section of both glosso-pharyngeals and pharyngeal branches of vagus. (Graph II-B).

Faradic stimulation of central end of the pharyngeal branches of the vagus resulted in slowing and reduction in ventilation. The costal or abdominal movements were slightly increased. (Graph III-B).

Faradic stimulation of the central end of the glosso-pharyngeal nerve caused a marked slowing and reduction in ventilation, both costal and abdominal movements being reduced. (Graph III-A).

Larynx.—Mechanical stimulation of the laryngeal mucosa produced a slowing, and reduction in ventilation (Graph II-C & D) generally unaccompanied by reduction in costal or abdominal movements.

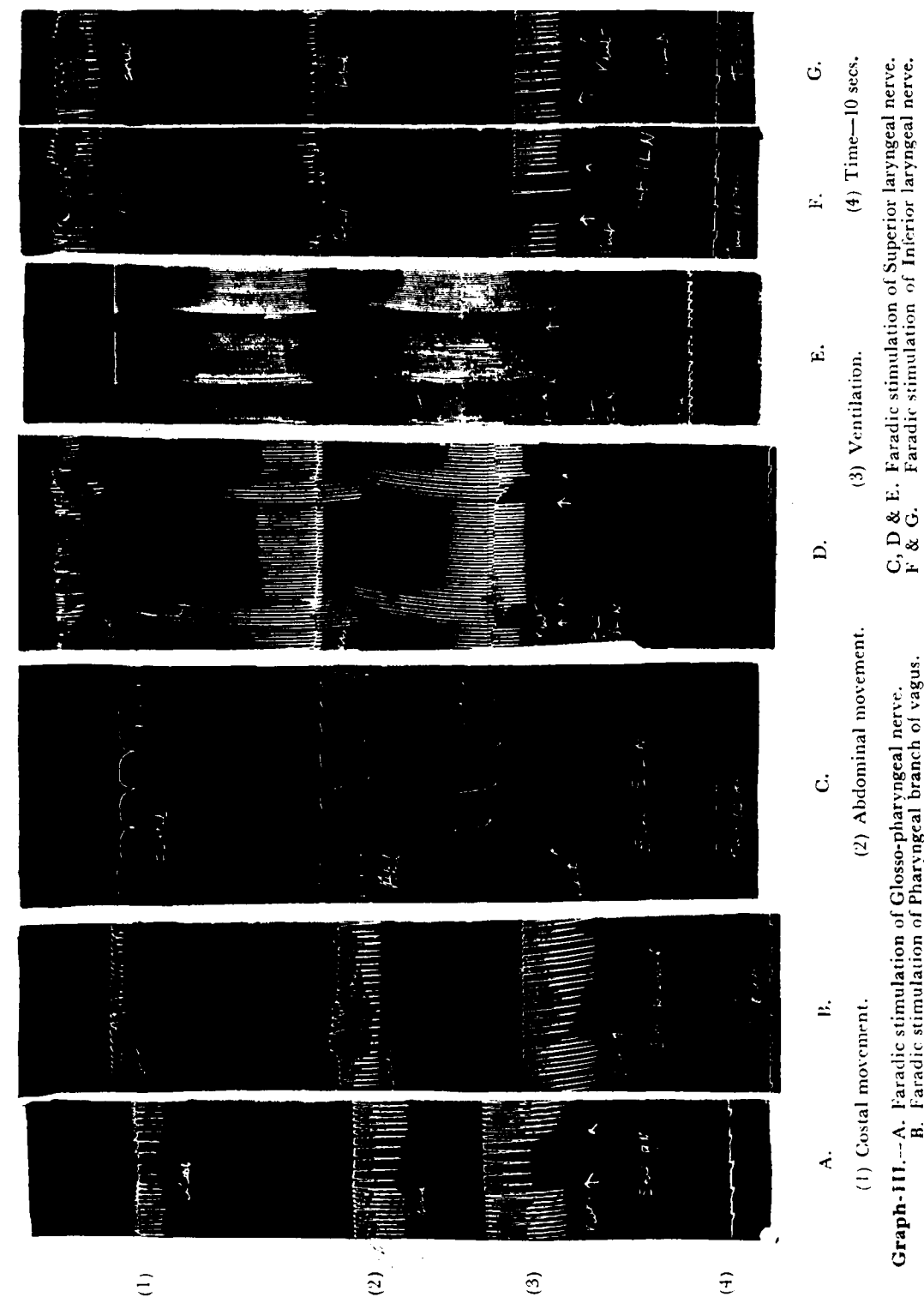
The response was unaffected by bilateral midcervical vagotomy, and slightly reduced by bilateral section of superior laryngeal nerves (Graph II-E) but section of the vagi in the middle of neck and both superior laryngeal nerves, (Graph II-F) or section of vagi above the origin of superior laryngeal nerves abolished the response.

Faradic stimulation of the central end of the superior laryngeal nerve generally always produced a marked slowing and reduction in ventilation (Graph III-C.) In one animal, powerful expiratory efforts (coughing) was obtained, with the abdominal movements being more excursive than the costal (Graph III-D). In another animal there was apnoea in the mid-position (Graph III-E). Acceleration of respiration was never obtained. Faradic stimulation of the inferior laryngeal nerve was found to produce varying degrees of slowing (Graph III-F & G). The ventilation per breath was not reduced and was sometimes increased. Sometimes however, no significant, respiratory response was obtained on stimulation of this nerve.

DISCUSSION

(i) **Reflexes from the nose.**—The respiratory responses obtained on stimulation of the nasal mucosa, in this investigation is not in conformity with the usually described effects of inhibition of respiration or sneezing. That the response is reflex, is shown by abolition of effects on procainisation of the mucosa. In dogs anaesthetized with chloralose, acceleration of respiration with or without increase in ventilation was generally always obtained on

GRAPH—III



mechanical, chemical or electrical stimulation of the nasal mucosa. It is possible that an accelerator reflex from the nasal mucosa is normally present, but in the conscious individual is overshadowed by the powerful protective inhibitory or expiratory reflex.

(ii) *Reflex from the Pharynx.*—The pharyngeal respiratory reflex in the anaesthetised dog is always inhibitory, the inhibitor afferent impulses being mediated by both the glosso-pharyngeal branches of the vagus. There is a suggestion that broncho-constriction occurs, as the ventilation is reduced without corresponding reduction in respiratory movements.

(iii) *Reflexes from the Larynx.*—Mechanical stimulation of the laryngeal mucosa always produces inhibition of respiration, inspiration being cut short, and expiratory activity being increased. Response was much more marked than that obtained from pharynx. Cough reflex was not obtained by mechanical stimulation of the larynx in the anaesthetized animals. Faradic stimulation of the superior laryngeal nerves gave similar responses, but in one animal typical cough reflex was elicited, in another apnoea in the mid-position was obtained, showing that the superior laryngeal nerve is primarily expiratory in action. The inhibitory impulses are mediated through the superior and inferior laryngeal branches of the vagus nerve, probably mainly through the former, as the response is unaffected by section of the vagus, but reduced by section of superior laryngeal nerves, and as effect of stimulation of the inferior laryngeal nerves less constant and less marked than that obtained on stimulation of the superior laryngeal nerve.

SUMMARY

1. Literature on the respiratory reflexes from the upper respiratory passages is briefly reviewed.
2. The experimental procedures employed is briefly described.

3. Mechanical, chemical, and electrical stimulation of the nasal mucosa in anæsthetised dog causes acceleration of respiration with or sometimes without increase in ventilation. The response is abolished by procainization of the mucosa.

4. Mechanical stimulation of the pharyngeal mucosa inhibits respiration, and the afferent path was in the glosso-pharyngeal nerve, and the pharyngeal branches of the vagus.

5. Mechanical stimulation of the laryngeal mucosa also inhibits respiration, the impulses being mediated through the superior and inferior laryngeal branches of the vagus.

REFERENCES

- Burn, J. H. (1951), *Practical Pharmacology*. Oxford Blackwell Scientific Publication.
- Dukes, H. H. (1947), *The Physiology of Domestic Animals* - 6th edition, New York, Constock Publishing Coy., Inc.
- Foster, M. (1895), *A Text Book of Physiology, Part II* - 6th edition, London Macmillan & Coy.
- Gesell, R. & Hamilton, M.A. (1941), *Amer. J. Physiol.* 133, 694.
- Hammouda, M. & Wilson, W. H. (1939), *J. Physiol.* 94, 497.
- Knoll, P. (1882), Quoted by Titelbaum, H. A. et al (1936).
- Luciani, L. (1911), *Human Physiology, Vol. I*, London Macmillan & Coy.
- Schmidt, C. F. (1938) in *Macleod's Physiology in Modern Medicine*, 8th edition, Henry Kimpton, London, Henry Kimpton.
- Singh, H. D. (1956), Thesis submitted to the University of Madras for Part I of M.Sc. in Physiology.
- Titelbaum, H. A. & Ries, F. A. (1934), *Amer. J. Physiol.* 109, 105.
- Titelbaum, H. A. & Ries, F. A. (1935), *Ibid*, 119, 684.
- Titelbaum, H. A., Ries, F. A. & Lisansky (1936), *Ibid*, 116, 505.

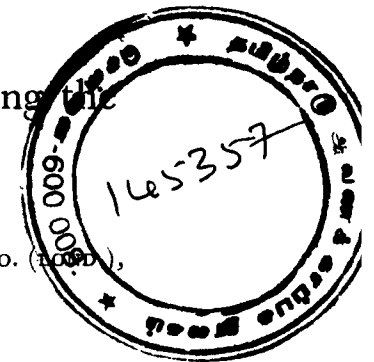
A case of Rhinosporidiosis affecting the naso-lacrymal duct

BY

Dr. H. HAZRA, M.B. (CAL.), F.R.C.S. (EDIN.), D.L.O. (LOND.),
Reader in E. N. T. Diseases

AND

Dr. M. C. MISRA, M.B.B.S. (PATNA), D.O.M.S. (LOND.),
Professor of Ophthalmology, S. C. B. Medical College, Cuttack.



Incidence.—Rhinosporidiosis is not a very rare condition in Orissa; particularly in its southern and western parts. The incidence can be judged from the following figures. 15 cases were seen in a period of one year (From 1-10-'54 to 30-9-'55). During this period the total number of new patients attending the E. N. T. Out-patients department of the S. C. B. Medical College Hospital, was 8760.

Although cases of rhinosporidiosis are seen in the hospital from time to time, involvement of the lacrymal passage was seen in only one patient in a period of 6 years (From 1949 to 1955) in our hospital. It is for this reason that we thought it desirable to publish this case report. Kirkpatrick from Madras recorded the first case of lacrymal sac infection (1926). Subsequently affection of lacrymal sac was described by various authors; Wright (1922). Ranbho (1949) and in Ceylon by Karunaratna (1936). According to some author the affection of the ocular apparatus including the eyelid, conjunctiva and the lacrymal sac occurs in 14% of all cases of rhinosporidiosis (Reddi, April, 1954). But our experience is otherwise.

CASE REPORT

History.—Male aged 21 years was admitted into the E. N. T. Ward of the S. C. B. Medical College Hospital on 19-4-'55 with the following complaints:—

- (1) Blood stained discharge from the left nostril for 1½ years.

L183:4m N490T

N 56.8.1-2

- (2) Partial nasal obstruction on the left side for $1\frac{1}{2}$ years.
- (3) A fistula in the upper part of the left lateral side of the nose for $1\frac{1}{2}$ years.
- (4) Feeling of a lump in the throat for 10 months.
- (5) Intermittent nasal obstruction on the right side for 6 months.

Past History.—He was operated for an abscess in the left lacrymal region 2 years back, but there was recurrence and he was operated again 6 months later. Since then the operation wound did not heal and viscid discharge was coming out through the fistula.

ON EXAMINATION

General.—The patient was of moderate build, no anæmia or emaciation. No other abnormality detected.

Local.—(a) Externally - fistula was seen in the lacrymal region on the left side from which viscid discharge was oozing out. The skin surrounding the fistula was brownish in colour and was slightly elevated from the surrounding area.

(b) Anterior Rhinoscopy - A pedunculated reddish granular mass was seen in the left nostril. The pedicle was found to arise from the anterior part of the inferior meatus of the left side. The free end of the mass could not be seen on anterior rhinoscopy. Septum was slightly deviated to the left. Viscid blood-stained discharge present in the left nostril.

(c) Examination of Pharynx - Tonsils slightly enlarged and congested. A dark red granular mass was found to hang into the oropharynx on the left side (*vide* Fig. 1). The free end was touching the base of the tongue. The mass was freely mobile, the stalk arising from above the oropharynx. On lifting the mass forwards the posterior surface was found to be studded with minute greyish dots. It was soft in consistency.

(d) Posterior Rhinoscopy - It was found that the pedicle of the mass was coming from inside the left nostril and it had no attachment in the nasopharynx.



Fig. 1.

The rhinosporidial mass is seen hanging from the nasopharynx into the oropharynx on the left side.



Fig. II.
Low power view of a portion of the
mass removed from the nose.

Fig. III.
The granular mass is seen to project out through
the lacrymal fistula. This mass was seen after
removal of the nasal portion of the rhinosporidial
mass.



Fig. IV.
The pedunculated rhinosporidial—mass after
removal from the nose.

(e) Examination of the larynx and the ears - did not reveal any abnormality.

Investigations done.—(a) Examination of nasal smear for spores was negative.

(b) X-ray of the paranasal air-sinuses did not show any abnormality.

(c) Biopsy of a portion of the mass - The report on the histological examination was as follows "Cellular growth, Polypoidal in appearance, Surface epithelium thickened and of squamous type. Just under the epithelium masses of spores with certain amount of necrosis of tissues is seen. Chronic inflammatory cell infiltration is prominent. Diagnosis-Rhinosporidiosis". (vide Fig. II).

(d) An attempt to pass a lacrymal probe through the naso-lacrymal duct could not succeed because of obstruction.

Operation.—The mass was removed under local anæsthesia. The nasal cavity on the affected side was plugged with narrow strips of ribbon gauze soaked in 2% Anethaine solution mixed with a few drops of 1 in 1000 adrenaline solution. The packing was left for 20 minutes after which it was removed. The pharynx was sprayed with 2% anethaine solution. As the nasal cavity on the affected side was very narrow due to septal deviation a nasal snare could not be passed backwards so as to get the loop of the snare round the mass. A long narrow artery forceps was passed through the mouth and after the mass was caught in the Oropharynx it was twisted. The whole mass together with its pedicle came out easily. The base was then cauterised with galvanocautery. Then the nose was plugged with ribbon gauze soaked in a mixture of liquid paraffin, penicillin and sulphonamide powder as there was some amount of bleeding. The plug was retained till next day. After the operation the patient had blood-stained discharge through the lacrymal fistula. So a pressure bandage was applied over the left lacrymal region.

Next day the nasal plug and the bandage were removed and it was found that a red granular mass of the size of a pea was projecting through the lacrymal fistula (*vide* Fig. III). This mass was never seen before. The nasal cavity was clear except a little blood-stained discharge. A portion of the mass projecting through the lacrymal fistula was sent for biopsy and the report was the same as before.

It was then decided to remove the rhinosporidial mass from the naso-lacrymal duct by curettage and diathermy coagulation. But unfortunately the patient did not agree to it and left the hospital before it could be under-taken. So the cases could not be followed up and studied further.

Acknowledgment.—We must express our gratitude to Dr. S. C. Das, Superintendent, S. C. B. Medical College Hospital, Cuttack, for his kind permission to publish the case report. We should also thank Dr. A. M. Tripathy, the Professor of Pathology, and Dr. G. P. Mohanty, the Asst. Professor of Pathology, S. C. B. Medical College, for carrying on the histological examination of the specimen removed from the nose and the external fistula. We must also thank Sri K. S. Mohanty, Artist, Pathology Department for drawing the coloured figure and also for taking photographs of the patient and of the specimen removed from the nose.

REFERENCES

1. Elliot, Tropical Ophthalmology, 1920 Edition, page 205 (Oxford Publication).
2. Duke-Elder, "Text Book of Ophthalmology", Vol. V, Page 5340, 1952 Edition (Henry Kimpton).
3. Ranbho, V. C., Proceedings of the All-India Ophthalmological Society, Vol. X, Page 72, 1949.
4. Kirkpatrick, H., "Rhinosporidiosis of the lacrymal Sac" Ophthalmoscope, Vol. 14, Page 477, 1946.
5. Karunaratna, W. A. E., "The Pathology of Rhinosporidiosis infection". Journal of Pathology and Bacteriology, Vol. 42, Page 193, 1936.
6. Wright, R. E., Indian Medical Gazette, Vol. LVII, Page 81, 1922.

Lingual Goitre

BY

Dr. P. N. SINHA, M.B.B.S. (PAT.), D.L.O. (LOND.), D.O.M.S. (LOND.)

Very few cases of Lingual Goitre have been reported till now although it has been surmised that many more do occur but are not reported. I come from an area where Goitre is in endemic form, more in North Bihar in the district of Muzaffarpur and Champaran. Even from the look you can spot out the residence of such persons and it is often commoner in women. I came across two cases of Lingual thyroid within a very small space of time.

Monako Devi, aged 22, Hindu female came to my hospital on 15—2—'55. She came from my district with the following complaints:—

- (1) Frequent spitting of blood since 5 years.
- (2) Change in voice since 3 years.
- (3) Pain in throat since 1 year.
- (4) Difficulty in deglutition.

History of present illness.—About five years back she spit blood from the mouth, nine months after-wards it was again repeated. After four months it was again repeated. Since that time it occasionally occurred once or twice a month. Last she bled was 15 days back. She felt choking sensation at the time of bleeding. She had altered voice since last 3 years and had Odyn-Phagia since last one year. Sometimes bleeding took place after taking food or sometime without any rhyme or reason. She had amenorrhœ, since last two years and eight months after the birth of the second child. There is nothing remarkable about her family and past history. Her menstrual history is as follows:—

She started menstruation at the age of 13, period 28 days, duration 4 days and flow scanty.

Past history.—Five years ago she had one abortion. Since that time her present trouble started. She gave birth to another child who is aged two years eight months. She had severe postpartum hæmorrhage.

General health.—Pulse 92 per minute, regular. Voice - thick and unlike that of a woman. Face - slightly puffed up. Blood pressure - 108/60. Height - about 4½ ft. She was stoutly built.

Local examination.—She had complete absence of the thyroid gland and had a depression in the thyroid area so much so that the tracheal rings could be palpated through and through. A swelling was seen inside the mouth in the posterior third of the tongue. It was scarlet red in colour. It had uneven surface and was rather hard in margin but soft in centre.

INVESTIGATION

Blood examination.—W. R. - Negative. R. B. C. percentage - 70. B. T. - 30 sec. C. T. - 3 mts. Total R. B. C. - 3.48 million per c. c. W. B. C. - 8,750 per c. c. Diff. W. B. C. Count - Polymorphs - 63%. Lympho - 31%. Mono - 1.5%. Eosino - 4.5%. E. S. R. - 1st hr. - 40 mts. 2nd hr. - 74 mts. Mean average 38.5 mm. per hr. Urine - Albumen - nil. Sugar - nil, and no other pathological abnormalities. Stool - Giardia cysts - a few. Tenia ova - a few.

DIAGNOSIS-LINGUAL THYROID

Treatment.—Medical treatment was under taken for Anæmia etc. It was decided to do surgical treatment and with that end in view tracheostomy was done by me on 8—3—'55. I consulted my colleague Prof. U. P. Sinha and he was of the opinion that unless the operation was done through hyoid bone and after dissecting the tongue there was no chance of the exposure of the tumour.

Operation was under-taken under general anæsthesia on 16—3—'55. A midline incision was made from symphysis menti upto thyroid cartilage. Muscles were separated, hyoid bone was left *in situ* and mandible was divided in mid-line, tongue was bisected medially. The tumour mass became

entirely free. It was shelled out from base in its entirety. In centre there was a gelatinous mass. A portion of it was sent for biopsy, the result of it came out to be thyroid tissue. The patient never rallied round and she succumbed next day. I think surgically the approach was too hazardous and from such mutilating operation it was difficult for patient to survive.

Another patient a girl aged 12 years Bijoy Lakshmi daughter of a teacher of Gaya came for difficulty in swallowing. I saw her on 2—6—'55.

Present history.—Since about 20 days she had difficulty in swallowing so much so that taking solid food was impossible. Salty food was also irritating to back of tongue. She further complained that this trouble used to come and go at intervals of a fortnight.

Past history.—The patient had typhoid about 3 years back which lasted for a month. After that she had an attack of chicken-pox during the course of which this swelling over the tongue was discovered.

Family history.—Nothing particular.

Social history.—She was a student of II class two years back. Parent said that she was mentally dull. Menses had not started.

General examination.—She was thinly built of average height. There was nothing wrong in chest, Heart and abdomen. Pulse rate 98 per minute. It was regular, volume and tension were fair.

Local examination.—Blood W. R. - Negative. B. T. - 1 mt. C. T. - 3.45 sec. Total R. B. C. - 5000 per c.m.m. W. B. C. - 6250 cell per c.m.m. Diff. Count - Poly - 28%. Lymph - 28%. Large mono - 4%. Eosino - 0%. Hæmoglobin 100%. Urine - Albumin - nil. Sugar - nil.

The patient went away home on 4—6—'55 on one month's leave. The patient never returned and I think that dread of operation has been responsible for her not coming. Another point is that perhaps she has got no symptom and she might come later on.

Historical data.—I have already alluded to you about rarity of the disease.

Lahey (in 1923) reported to have seen two cases in 7600 patients, Miller in 1933 reported two cases in 8500, Ulrich reported one case in 4000. Schilling - 1950; Carr - 1950; Hursh - 1950; they reported one in 2,44,000. The data was collected from Strong Memorial Hospital and Rochester Hospital.

Clute and Katell 1930 reported that the disease was rare.

Bertin and Gelle studied this condition very exhaustively. Smyth reported three cases of his own and 35 from literature.

Grace and Week (1932) - Several cases of Asphyxiation is due to its presence. It is unnoticed and infant dies. Ordinarily the average age of notice being taken is 23 years. Although in my second case the age was twelve.

Hodson - found thyroid tissue in the lip while removing epithelioma of lip.

Macrae found thyroid tissue while doing Laryngectomy.

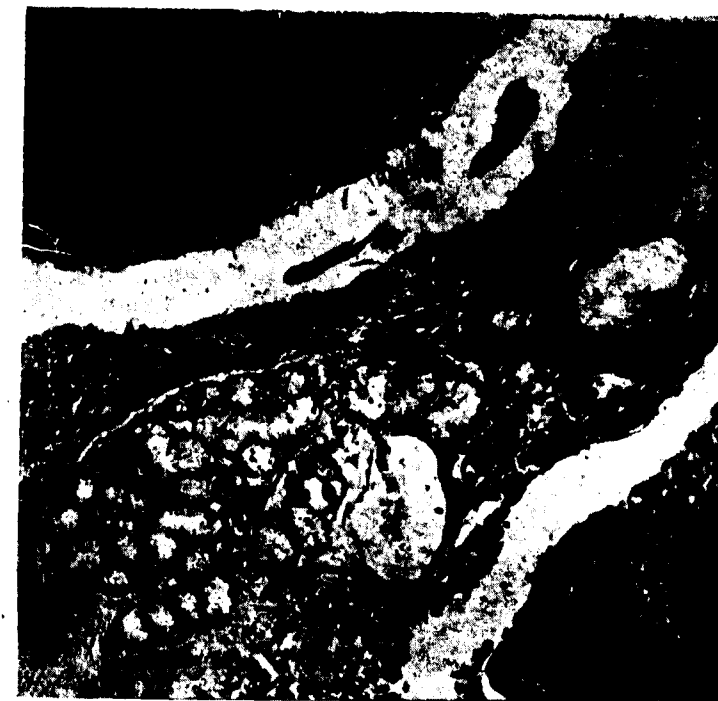
Historical.—Hickman an English man in 1869, first reported a case of a new born's death due to suffocation. It was corroborated by Autopsy.

Hunt an American (1865) reported a case of tumour at the base of the tongue of a young woman. It was not diagnosed.

Haynes (1912) found a case of tumour in the base of tongue in a girl aged 18. It was operated and the girl was cured.

Mont-Gomery (1936) reported 236 cases of Lingual Thyroid.

Etiology.—It is embryological malformation. Seln and Withen have reported its occurrence following thyroidectomy as a compensatory measure. It enlarges during pregnancy, because of it, is not so much found in men even if it exists in rudimentary form.



Microphotograph of Lingual Thyroid of Monako Devi.

Embryological.—The following description made by Hartley in 1922 - Thyroid gland is present in all vertebrates. It is composed of closed Vesicles containing colloid material. Thyroid takes its origin from a median anlage which grows from ventral wall of Pharynx. In human embryo median anlage occurs at a very early age as an evagination from Mesial portion of the ventral wall of the primitive pharynx. The evagination quickly develops into a sac. The oropharynx which opens on the summit of Tuberculum Impar (1st rudiment of tongue) and then migrates backwards to its posterior boundary furrow. The pouch becomes bilobed, and then travels caudally. The thyro-glossal duct which for a time has double lumen atrophies and soon the thyroid breaks its connection with the pharynx (7 to 8 m.m.) The organ then becomes a broad structure composed of irregular cord of cells disposed for the most part transversally. In Embryo some of the thyroid cords develop lumen, become beaded and soon thereafter break into rudimentary follicle. Probably some times after birth the formation of thyroid continues, iodine is not present until some-time after birth. Hartley, has tried to prove that functioning thyroid arises from medial Pharyngeal rudiment and from no where else.

Other opinion.—(2) Walton (1943) - The lateral lobes are formed independently from down-growth on each side from the fourth ventricular cleft.

(3) Krafka (1942) - The thyroid is generally conceded to have its origin in a single median premordium arising as the thyro-glossal duct at the Tuberculum Impar in 1.4 m.m. stage and from a pair of lateral premordia (at 4 m.m. stage) from the epithelium of the ventral wall of the 4th branchial pouch. Contact is lost with the surface epithelium by the median anlage at 13 m.m. and caudal migration separates the lateral premordium from pouch of epithelium at 16 m.m. stage.

(4) Norris - That no proof exists of functioning thyroid tissue being derived from any other source than the median pharyngeal rudiment. Lateral aberrant thyroid tissue develops

from posterior portion of 3rd and 4th branchial pouches in contrast to thyroid gland which comes from median portion of the floor of pharynx. He has demonstrated the fusion of these lateral bodies with the main body of the gland in 15 m.m. human embryo. Following these, lateral bodies atrophy and take no part normally in the formation of adult gland. The cessation of this process in any stage accounts for thyroid tissue in the lateral position. Only seven such cases were seen in 7600 goitre operations.

Description of Macroscopic Appearance.—Lahey - these are peculiar tumours, they look like melanotic sarcoma, bluish black in colour very soft to feel and running on each side of jugular vein. They are papilli-form in character and are very sensitive to radiation and a definite number of them become malignant. These tumours should be taken out radically. Many of these cases develop myxœdema subsequently, thus proving it to be lingual thyroid.

Diagnosis.—In the recent years radio-active iodine has been used in tracer doses.

Nachman, Crall and Bigger have reported after investigating by this method and subsequent operation. By radiation auto-graph the iodine was found deposited in acinar wall and very little in colloid.

TREATMENT

Medical treatment.—Radio-active Iodine has been given by prolonged use. Schilling, Carr, Hursh treated a patient. Fibrosis occurred in 2½ years and cure in 30 years—Worth the name although functional change was prompt .032 gram daily dose of thyroid extract was given subsequently. Beyond this no case has been reported with this method of treatment.

These treatments which are adopted for ordinary thyro-dism should be done after operation. In case of low BMR iodine and thyroid both should be given. If BMR is normal or high only iodine should be given.

Surgical treatment.—Ulrich (1932) described the treatment as such. When urgent dyspnoea is produced by increase in size of lingual thyroid then treatment should be sought. In young tracheostomy should be done first. A big incision should be made to explore the possibility of any aberrant thyroid tissue. If such tissue is found then lingual thyroid is removed in toto but if none is found conservative treatment should be adopted.

Some thoughts on operation.—(a) Diathermy knife should be used to avoid bleeding. After its complete removal thyroid extract should be immediately given.

(b) It is better to explore for the existence of aberrant thyroid tissue in neck area by operation. This procedure is much better because surgeon is aware from before about its existence or non-existence and removal of Lingual Thyroid is facilitated either in toto or partially. If this is adopted much of myxœdema and stunted growth following removal can be avoided.

(c) In case of aberrant thyroid no thyroid extract is given and complete watch is made and in case of symptoms iodine should be given freely.

Whalen (1934) reported of having treated a case by using Bipolar Electric-Coagulating Current. He destroyed a sufficient amount which was causing obstruction in mouth and left a sufficient amount for normal assimilation.

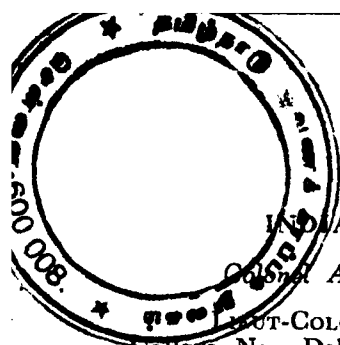
SUMMARY

(1) Two cases of lingual thyroid are being reported in which one died after operation and the other escaped operation.

(2) This is a rare disease but I think its number will increase if it is kept in view.

I would appeal to my friends to keep a watch in their area specially if the thyroid is in endemic form.

I thank Prof. U. P Sinha, Professor of Surgery, for helping me in diagnosing and doing a part of operative work.



Association Notes

INDIAN COUNCIL OF MEDICAL RESEARCH

Colonel Amir Chand Trust Prizes for Medical Research

MAJOR-GENERAL AMIR CHAND, ex-Principal, Lady Hardinge Medical College, New Delhi, has made a donation of Rs. 50,000/- to the Indian Council of Medical Research for the purpose of awarding prizes for the best published research work in the field of medical sciences. The Governing Body of the Council has constituted a Trust called the "Colonel Amir Chand Trust" for the administration and management of the Fund.

SIX PRIZES, of almost equal value, of which some may be in the form of medals, are awarded annually on an All-India basis for the best published research work in any subject pertaining to all fields of medical sciences in general including clinical research. The term, "Clinical Research" will imply research into the mechanism and causation of disease, including its prevention and cure. It covers not only work in patients in hospitals, but also field studies in epidemiology and social medicine and observations in general practice.

THREE of the Prizes are known as, "BASANTI DEVI AMIR CHAND PRIZE" and the other THREE, "SHAKUNTALA DEVI AMIR CHAND PRIZE".

Two out of the Six Prizes.—Shall be awarded to graduates of not more than ten years standing, counting from the date of graduation, provided that the work for which the prizes are to be awarded is of approved merit.

THE COMPETITORS for the prizes may be MEDICAL or NON-MEDICAL graduates—

THE SELECTION of candidates for the award of the prizes will be made by a Selection Board for the purpose.

IN A JOINT PUBLICATION the prize shall be divided between the joint workers in such proportion as the Selection Board may recommend.

It has been decided to award during 1956 six prizes of the value of Rs. 300/- each for the best research papers in medical science published by workers during the year 1955 (1st January to the 31st December, 1955).

THE AWARD of the prizes will be announced at the annual meetings of the Scientific Advisory Board and the Advisory Committees of the Indian Council of Medical Research, to be held at Mysore in November/December, 1956.

THE CANDIDATES are required to submit 10 REPRINTS of their papers published during 1955. These should be sent to the DIRECTOR, INDIAN COUNCIL OF MEDICAL RESEARCH, "P" BLOCK, RAISINA ROAD, NEW DELHI, so as to reach him Not Later than the 1st August, 1956.

THE PAPERS should be accompanied by a short biographical sketch and two copies of PASSPORT SIZE PHOTOGRAPHS of the worker or workers concerned.

JL
L18314 M2, N4901
NSB. 8.1-2

Association Notes

93

9th ANNUAL CONFERENCE OF THE OTOLARYNGOLOGISTS OF INDIA

Date: 30th, 31st December 1956 and 1st January 1957.

Place: Jamshedpur.

For further particulars: Please write to Dr. M. M. NATH, 5-B. C, Road, Jamshedpur, Bihar, the Local Secretary of the Reception Committee.

P. S: Those who wish to read any papers may please send in their names and the subject of the paper to Dr. Nath, but the copy of the paper must be sent to the Secretary at Bombay for scrutiny by the Editorial Board. Please send these well before 1st of November to include the information in the printed programme.

LOCULA

Sodium Sulphacetamide Solutions & Ointment

- HIGH PENETRATION RATE
- INCREASED TISSUE CONCENTRATION
- NON-SENSITISING

For

LOCAL SULPHONAMIDE THERAPY IN INFLAMMATORY
DISEASES OF EYE, EAR, NOSE AND THROAT

For further particulars, please write to:

EAST INDIA PHARMACEUTICAL WORKS LTD.

CALCUTTA-26

CORRECTION OF
IMPAIRED METABOLISM

NEOGADINE

ENDORSED

By nearly 20 years clinical experience

Particulars from:

RAPTAKOS, BRETT & CO., LTD., WORLI, BOMBAY.

OTOLARYNGOLOGY

IN FIVE LOOSE-LEAF VOLUMES AND DESK-INDEX

Edited by

GEORGE MORRISON COATES, HARRY D. SCHENCK, M. VALENTINE MILLER

WITH

120 of the Leading Specialists contributing outstanding chapters.

DETAILED PROSPECTUS WILL BE SENT UPON REQUEST.

Price of the set is Rs. 525/- and the Members of the Association of Otolaryngologists of India are eligible to a Library Discount of 10% free, packing and freight.

Sole Distributors in India:

CURRENT TECHNICAL LITERATURE COMPANY, PRIVATE LIMITED

Madras Branch:

331-333, Thambu Chetti Street
Post Box 128—MADRAS-1

Head Office:

"INDIA HOUSE", Opp. G. P. O.
Post Box 1374—BOMBAY-1

UNICHEM LABORATORIES

BOMBAY-26

UNI B COMPLEX C

Increased potency — Costs the same

Vitamin C is increased from 100 mg., to 150 mg., B₂ from 5 mg., to 10 mg., Panthenol from 1 mg., to 10 mg., etc., per tablet in Uni B Complex C which also supply fungal diastase for complete carbohydrate metabolism.

★

UNI B₁₂ COMPLEX

For all types of Anæmias, Para sprue, Peripheral neuritis, General debility etc.

(To ensure maximum stability—Uni B₁₂ Complex is supplied in two vials of 5 c.c.)
(Each to be mixed at the time of injecting)

Each c.c. mixed solution contains (½ c.c. from each)

Vitamin B ₁₂	50 ug.	Vitamin B ₁	25 mg.
Vitamin B ₂	3 mg.	Niacin	100 mg.
Panthenol	10 mg.	Pyridoxine	5 mg.
Folic Acid	5 mg.	Betain H Citrate	25 mg.
Procain Hcl	10 mg.	Chlorobutol as Preservative	0.5%

★

FOR FURTHER PARTICULARS, PLEASE CONTACT:

Agents:—

M/s. GANAPATHY & CO.

48, BUNDER STREET

::

G. T., MADRAS-1