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MEDISCOPE
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Scope and Indications of Corneal Grafting with Review of 12 Cases

By

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"To look into happiness through another man's eyes" (Shakespere)

Not too many years ago text books of ophthalmic surgery used to describe Keratoplasty as of historic interest only. But now, it is (within last two decades) that surgery of Cornea—specially Keratoplasty forms a very important chapter. With the recent advances of proper anaesthesia and akinesia, improvements in surgical technique, development of fine and sharp instruments and direct edge to edge fine sutures of the graft have improved our results, which vary between 50 and 90% in various clinics. Thus does blindness from corneal diseases begin to fade from the Scroll of hopeless and untreatable eye diseases.

Out of many social problems in India problem of blindness is of colossal magnitude. There are nearly 2 million totally blind and more so partially blind. This figure constitutes nearly 1/5th of the total blind population of the globe and with the exception of Egypt, India has the highest incidence of blindness. Nearly 10% of this immense blindness labelled as incurable can be improved upon or cured by this operation of corneal transplantation. But it is a pity that we have no donor material to help these thousands of helpless, unfortunate blind pesons. It is because of this that corneal surgery is not so much developed in India whereas during my recent tour of various corneal centres in Continet and U. K., I was amazed of easy availability of such donor material. It is because of the effective legislation over there, thus allowing removal of

eyes from dead bodies dying in the hospitals. To bring this into force in India, I am afraid we will have to overcome many superstitions and prejudices. It is high time now that we should rise to the occasion and 'donate our eyes' gladly. I will request to the Central and various State Governments to pass an order for the removal of the eyes of destitute persons dying in the hospitals shortly after death as has been done by Madras Government and recently Bombay Government has enacted a corneal grafting act. This order has to be definite allowing the eyes to be removed within 2-3 hours after death as the cornea of the eyes removed after that time may be useless for the purpose of grafting. To facilitate further supply the establishment of various eyebanks in the centre and various states is desirable. The aims and objects of this organisation should be:—

1. Collection and preservation of healthy corneal tissue from human eyes for transplanting to blind persons.
2. Education and persuation of the public to give their cooperation by giving consent to donate their eyes after death-through press, platform, magazines and Radios etc.
3. To encourage and promote research in the skill required to perform this operation and to promote research on corneal conditions leading to blindness.
4. Cooperation of all leading industries both private and Government as well as various public health and medical agencies including Indian Red Cross and the Indian Air Lines for the transportation facilities to cater all the areas in various parts of the states.
5. Procurement of eyes from various places and their distribution within a fixed period to the surgeons who perform this operation.

It may not be out of place to mention that removal of eyes from cadavers etc. have to be done under strictest aseptic conditions. The eyes thus removed can be preserved 4–7 days, either by moist vapour chamber method or in sterile liquid paraffin at 4° C. Recently method of storage under frozen state is being tried which when successful will enable us to store cornea for 6-9 months. Donor must be free from Diabetes and syphilis. Blood grouping doesn't matter at all.

The donor cornea should have a bright sheen with normal shape and curvature. It may be slightly grey but bright surface is important. The presence or absence of epithelium is immaterial, though it is desirable that it should be least injured. Soft macerated, mottled corneas are useless. There should be no opacity, necrosis, smell or fungoid growth.

It is strange that some people still confuse corneal transplantation with complete replacement of whole eyeball which unfortunately is not possible because eye as we know is a part of the brain from which it develops as an hollow outgrowth so the optic nerve fibres which are devoid of Neurolemmo are incapable of regenerating its fibres once these are cut.

It is because of this the replies to most of the enquiries from the anxious parents, husbands and wives based on this presumption are sometimes disappointing.

This paper will not delve into the various methods of surgical technique, Post-operative care and complications etc. but will be limited only to the indications of this operation and will also give a brief review of 12 cases operated by me in this hospital.

Keratoplasty can be lamellar or Perforating which again may be partial or total. Till recently perforating Keratoplasty was very popular, but it is because of Paufique and Sourdille that Lamellar Keratoplasty is found to have many and definite indications. Prof. Franceschetti has evolved a combined technique of Mushroom graft which is useful in hopeless cases particularly in Fuchs epithelial and endothelial dystrophies and after corneal burns.

Indication of corneal grafting can be divided under four heads:—

I. *Optic* :—To improve vision.
II. *Therapeutic* :—To stop diseased process.
III. *Aesthetic* :—For cosmetic reasons.
IV. *Tectonic* :—To reconstruct the corneal ground or prepare the bed for subsequent perforating optic graft.

Now each one will be discussed briefly.

I OPTIC GRAFT :

(A) Corneal dystrophies :
(i) Hereditary
(ii) Acquired

(i) Hereditary :
1. The Granular dystrophy (Groenouw type 1)
2. Lattice like type of Haabs and Dimmer : Both these are superficial, so yield to Lamellar Keratoplasty.
3. Macular type (Groenouw type II) This is deeper so perforating graft is needed.
4. Fuchs endothelial Dystrophy : This does not show good results to perforating graft. Here either Mushroom graft of Franceschetti can be favourably employed or Prof. Paufique has evolved a method of scraping the endothelium 2-3 months before making a graft.

(ii) Acquired —
Nodular dystrophy of Salzmann, Here prognosis depends on corneal vascularisation.

(B) *Keratoconus*: This carries a good prognosis to partial perforating graft (6 to 6.5 m.m.) if contact lenses fail to improve sight. Sometimes if the Cornea is very thin, irregular or ectatic-placing of the graft is quite difficult. Very often prominence of the graft with much irritation results. So Dr. Casterviejo advises square graft and Joaquin Barraquer advocates a previous fulguration of the ectatic cornea (superficial cauterization with high frequency current) to flatten the ectatic cornea many days before doing a graft.

(C) Uncomplicated Leucomas from various types of corneal ulcers give good results but in complicated cases with plenty of vascularisation as in Herpes, Rosacea and trachoma, etc. previous application of Beta radiations to make

them vascular is very essential. In parenchyiatous form of Keratitis with deep vascularisation, prognosis may be guarded. In such cases and in complicated cases due to corneal burns with acids or Alkalis--several operations usually lamellar to prepare the bed for a final perforating graft may be required.

II THERAPEUTIC GRAFTS:

The object of this graft is to stop the evolution of the acute disease, torpid or relapsing lesions and to exert a trophic action on the Cornea surrounding the graft. It is used in:—

(1) *Herpetic (Meta-herpetic Keratitis) and Disciform Kertitis*:—The course can be quickly cut short by a superficial graft.

(2) Descematoceles.

(3) *Intra-corneal abscess*:—It is well known that all other forms of treatment fail and end in blindess.

(4) *Torpid corneal ulcers*:—Not giving improvement to various remedies, in Mooren's ulcer, it is well indicated.

(5) *Acute Interstitial keratitis*:— No doubt with the advent of cortisone-treatment has become easy and cornea clears up quickly. But relapsing tendency on cessation of treatment has made some surgeons to undertake lamellar therapeutic graft because it usually saves the eye from relapses.

(6) *In treatment of burns*:— The condition of cornea after these burns is misguiding in early cases as clear corneas are seen to opacify suddenly after 5-6 days. So consensus of opinion is to put a lameller graft without hesitation, because it almost always results in sedation of the symptoms and stops the progress of the lesion.

(7) *Pterygium*:— Recurrent pterygium. If the movement of the eye is limited because of dense scarring of the conjunctiva, it is also necessary to excise the whole scar tissue and separate it from the sclara and place a graft of the conjunctiva or replace it by buccal mucosa leaving 1-2 m.m. of area from the limbus bare.

(8) *Tumours at the limbus like dermoid etc*:— After Lamellar excision graft may be put.

(9) For treatment of Corneal fistulas both external and internal.

(10) Disease of the graft after perforating Keratoplasty is sometimes improved by an early lameller graft in the neighbourhood of the graft as indicated by Filatov, provided there is no ocular hypertension.

III AESTHETIC GRAFT:

For blind eyes with white leucomas and Corneas.

IV TECTONIC:

Preparatory graft. This is applicable in all cases in which the prognosis for a perforating graft is unfavourable because of much vascularization and in which a better ground must be prepared in the hope of making possible an eventual operation with an optic aim. This is particularly true of vascularized leucomas.

Contraindications:

1. Leprous Keratitis-The graft succumbs to original disease.

2. Neuro-Paralytic Keratitis with exposure of cornea due to Lagophthalmos and deprived of its neurotrophic system.

3. Corneal lesions with pemphigus:- There is no lacrimal secretion, so necrosis is the result.

4. Lesion with Erythema exudative multiforme (Stevens' Johnson's disease) Carry a bad prognosis:

My personal experience is limited only to 12 cases which are given under:—

Male = 10 cases.
Female = 2 cases.

Age incidence varied between 14 years and 34 years. All these cases had vision much less than 1/60. One of the female cases was done only from cosmetic point of view: The cases done were:

Partial Perforating	=	10 cases.
Complete perforating	=	1 case.
Lamellar for Recurrent Pterygium	=	1 case.

The size of the partial perforating graft was between 5.5 and 6.5 m.m. Only one case was of 7 m.m. Equal size of the graft, proper centering and better co-aptation of the edges were considered essential. Only in one case of 7 m.m. partial perforating graft; four direct edge to edge sutures were used but in all other cases two corneal mattress over-lay sutures were considered sufficiently safe. Egg membrane was used in all cases to protect the graft.

Indications of the graft were:—

(1) Recurrent pterygium = 1 case
(2) Kerato-conus = 1 case
(3) Total Leucoma Adherent = 1 case
(4). Central Leucoma after corneal ulcers healed with little or no vascularisation = 9 cases.

Donor material was mostly used from dead bodies of destitute persons or from unclaimed bodies of hanging within two to three hours after death. One of the donor was a cataract patient who died in the hospital on 7th day after operation because of bilateral Bronchopneumonia. The other eye which was aphakic with Vitreous in the anterior chamber was removed and utilised for partial perforating graft with good result. The enucleated eye-balls were kept in sterile liquid paraffin in refregirator and used within 24 to 96 hour's time.

In 3 cases the donor material was obtained from advanced cases of juvenile Macular degeneration with retinitis pigmentosa like picture as well. In these cases disc of transparent cornea was removed and transferred on to the recipient eye while opaque disc removed was carefully replaced on to the donor eye. I found that these were the best cases and are transparent till now (12½ years).

Post-operative care and complications:—

Usual post- operative care was observed. Atropine, Methylene blue drops and Hydro-cortisone were used from the 3rd day. I have used Diamox tablets for 5 days as a routine in all cases because it helps in the formation of anterior chamber, lowers the intra-ocular tension thus helping in the proper union and better co-aptation of the edges of the graft, and also prevents any non-inflammatory oedema of the cornea. All these factors well attribute to the transparency of the graft. Second eye is opened on the 8th day and stitches are

removed on the 12th day or so. Watch is always made about any neo-vascularisation which has to be combated by oral prednisone and beta-radiations.

Complications noted were:—

1. Anterior Synechiae with partial opaque graft = 1 case
2. Neo-vascularisation = 3 cases (Two cases responded to Beta-radiations)
3. Complete opaque graft = 2 cases
4. Parial Prominence of the graft with slight irritability. = 1 case
5. Iris Prolapse. = 1 case

This case of Iris prolapse was a young boy who unfortunately started running high temperature from the 2nd day, became delirious and violent and fell down from the bed on the 3rd day which resulted in Iris prolape.

Results:—

1. Iris prolapse. = 1 case.
2. Partial opaque graft. = 3 cases.
3. Completely opaque graft = 2 cases.
4. Completely transparent graft = 6 cases.

In 6 cases the graft has remained transparent since 1½ years or more. In one case the cause of partial opaqueness was slight adhesion between Iris and the graft. The visual acuity gained was between 6/36 and 6/12 partial. In partial opaque cases it was 6/60 or so.

No doubt the No. of cases is too small to make any conclusions but from the above results (50% cured and 25% partial success) it is quite encouraging. In the case of Iris prolapse which occurred due to fall from the bed and a case of complete Leucoma adherent which became opaque are excluded, the results will still be better. Moreover this study has been made from the unselected group of cases. No doubt suitable recipients are selected and their addresses noted but it was difficult to contact them when required (2-3 days time) or they actually did not turn up in time so we had to operate upon cases which were not suitable.

Moreover the cases of failures can be operated upon again with a slightly bigger trephine. One should not admit defeat unless operated 3 or 5 times. The troublesome complications are indeed adhesion of the Iris to the graft and vascularization. The percentage of the success can be increased if vascularization is checked earlier.

I think a day should not be farther off when with the development of refined techniques and easy availability of donor material, the results will be as good as that of cataract extraction.

May the blessings of Almighty be on our humble efforts. May He lead us to the blind out of darkness to joy and happiness in life.

*Drug Therapy on Hypertension

By

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Hypertension is increasingly met with in these days since the age of the general population is going up due to better sanitation and improved knowledge and methods of preventive medicine. Till very recently, the concensus of medical opinion was that hypertension should not be reduced, for it was held that reducing the pressure would cause lack of urinary secretion. It was felt that a head of pressure was necessary to drive the blood through the body, just as a head of pressure was necessary to keep the water supply to distant parts of a city. But with the advent of drugs like the Rawoulfia group of alkaloids and the ganglion blocking agents, this idea has undergone a radical change. These drugs have revolutionised, so to say, the treatment of hypertension.

Almost the first question that the clinician has got to decide is, when can a patient be said to be suffering from hypertension. When the systolic pressure recorded is 150 mm.Hg. or above and the diastolic 100 mm. Hg. or above, consistently, it can be called hypertension. One cursory reading of B. P. should never be the criteria to start treating a case of hypertension. It is nothing unusual for medical men who deal with candidates, either for appointment or for insurance purposes, to come across pressures which are much higher to start with, but after a few words of re-assurance from the examiner, settles down to normal levels. These are anxiety states and in persons who are unduly excitable, the pressure may go up by 30 or 40 mm. Hg. or even more, not only with the systolic but also with the diastolic pressure. Opinion is sharply varied as to what is likely to happen to these hyper-reactors. At one time it was felt that these cases are likely to end as hypertensives. A careful recorded series of cases which have been followed for over 25 years have failed to confirm such a state of affairs. So we are not in a position at the moment, to say what is likely to happen to these hyper-reactors. But one thing is certain. There is greater chance of hypertension occurring in these hyper-reactors than in normal individuals.

Hypertension is associated with certain symptoms like headache, tiredness, lassitude, giddiness, irritability, and not being able to go to sleep in time. These are all symptoms which may occur without hypertension and may be absent in persons with very high pressures. In other words, there is no symptom which can be said to be pathogenic of hypertension. Often enough, hypertension is a discovery made by the clinician when the patient goes to him for a vague

complaint or he might have come to him for physical fitness.

Many cases of hypertension are likely to settle down to normal levels with rest or with rest and mild sedation —the sedation of choice being phenobarbitone 1/4 gr. morning and noon and half to one grain at bed time. A few days of this therapy brings down the pressure to surprisingly low levels. The cases where the pressure comes down to normal level with rest and sedation, are not to be treated as hypertension. They are merely to be taken as cases of anxiety states or as nervous hypertension and the patients should be given re-assurance and mild sedation.

When a case consistently records high pressure, it has got to be investigated, particularly the kidney disorders. The kidney disorders may be either vascular, parenchymal or destruction in the passage or an infection in the kidney. In most cases clinical examination coupled with urine examination and I. V. pyelography will give a clue to the cause. The next possibility is the endocrine disturbance which can be a pituitary basophilism or an over-active thyroid or a tumour of the adrenal cortex or medulla. Generally adrenal cortical tumours occur in childhood resulting in a Herculian type of build with precocious puberty. As a result, a boy of 4 or 5 years has a genitalia like that of a full-grown adult and a small girl of 4 or 5 years starts menstruating. In both not only are the external genitalia like that of an adult, but even the behavior is like that of an adult. With regard to medullary tumours of the adrenal, it is called pheochromocytoma. This is the condition characterised by paroxysmal attacks of hypertension to start with and later the hypertension may be a sustained one. Besides hypertension there may be glycosuria. Patients may also complain of excessive sweating and tachycardia which is paroxysmal in character accompanied by a sense of fear. The symptoms complained of by these patients can be reproduced by injecting I.V. a small dose of adrenalin. These cases are likely to be mistaken as neurosis, particularly if they happen to record a normal pressure at the time when the case is being seen by the medical man. These cases can be spotted by giving an injection of Regiton I.V. and when recording the pressure, if a fall of 30 mm.Hg. either systolic or diastolic is recorded, it is taken to mean that the case is likely to be one of pheochromocytoma. Apart from Regiton, catecholamine content in urine is also estimated for 24 hours, and when the catecholamine exceeds 40 micrograms it is highly suggestive of pheochromocytoma. The tumour may be anywhere, but usually it is in the supra-renal medullary region or in any of the abdominal sympathetic chain. Peri-renal air insufflation sometimes helps to locate the tumour. Though the condition is uncommon, it is worthwhile spending some time in investigating the possibility of phaeochromocytoma in a case of hypertension, particularly, when the hypertension is paroxysmal in character. Disfunction of the gonads, may also be a cause of hypertension and this is called gonadal hypertension or menopausal hypertension,

which is more commonly seen in women. This disfunction is more abrupt in the case of women. It generally runs a benign course. Focal infection may sometimes be responsible for hypertension, it is worthwhile looking for any evidence of focal infection. There may also be excessive ingestion of pressor factors, like excessive intake of coffee, tea or lead. Once having eliminated the secondary cause, one is left with a large group of cases in which we are unable to point out the etiological factor, i. e. a group called essential hypertension. Essential hypertension is divided into two—benign and malignant. The distinction between these two is not very sharp. The case may progress from one state to the other insidiously. Benign essential hypertension is often spotted in the course of a routine medical examination or the patient may come for a vague complaint like dull morning headache, palpitation or pain over the precordium. Physical examination may essentially be normal. Fundus may show narrowing of the retinal arteries and undergo nicking at the arterio-venous crossings. B.P. shows elevation of both systolic and diastolic pressures, but the elevation of systolic pressure is much more than the diastolic pressure, resulting in a high pulse pressure. X-ray may show a boot-shaped heart and E.C.G. a left axis deviation. The apical impulse is heaving and rapid in character. Heart boundaries to start with may be normal, but where the hypertension has lasted for some years, it may show enlargement. Second aortic sound may be louder than normal and it may even be ringing in character. The ability to concentrate the urine is impaired even in early stages. The malignant hypertension may start as such or may occur after years of benign hypertension. Two important findings are: (i) papiloedema exudates and haemorrhages are seen in the fundus, and (ii) rapidly progressive downhill course, pulse pressure gets reduced as the disease progresses, heart size rapidly increases and is rapid due to heart failure or the kidneys may fail resulting in uraemia. A rapidly falling renal efficiency or a cerebral haemorrhage may cause death. Usually the life-span after the onset of this condition is 2 to 4 years.

Treatment: Once having established that there is hypertension, if there is a cause that can be responsible for elevating the pressure, it should be corrected. For example, if it is a case of phaeochromocytoma, the tumour must be removed, but where there are no factors obvious for the hypertension, then drug thereapy is indicated. Where it is classified as essential hypertension, if there is obesity, it has got to be corrected. Measures should be taken to reduce weight preferably gradually. As the person loses weight symptoms clear and the hypertension also gets reduced. These patients can be aided by putting them on diet which contains very little fat and giving them substitutes for sugar in the shape of saccharine, so that they lose weight. The weight loss should be adjusted so that it works out on an average 2 lbs. per week, and this fall is preferable to a rapid fall. If necessary, the body can be controlled by the use of amphetamine

group of drugs. Amphetamine group of drugs do not cause elevation of pressure in these grossly obese patients. They seem to stand the drug well in most of the cases. A few cases in which I have tried amphetamine, it neither causes elevation of pressure nor fall. Once the pressure has been brought to a steady level, patients are started on one of the rawoulfia group of alkaloids. The whole root of rawoulfia-serpintina contains pressor as well as depressor group of alkaloids. The depressor group of alkaloids are reserpin, rawoulfin and serpintina. The pressor groups are Ajmalin and Ajmalinine and others. When a whole root is used, one cannot be sure whether one is going to get elevation or depression of pressure. This is a serious drawback with regard to the use of whole root extract. I have had cases in which administering whole root extract, instead of causing a depression causes elevation of pressure. I am not in favour of whole root extract being administered in the treatment of hypertension. I feel we have no right to cause elevation of pressure in a man who seeks your help and who is already having an elevated pressure. Either we must try to keep the the pressure reduced or we should not do anything at all. We have no right to further elevate the pressure. The two preparations that are available in the market are (i) whole root serpinta (Himco) and Raudixin (Squibb). I personally prefer to use rawoulfia which is available under the trade name of R.S. 51. The main advantage of this alkaloid is, that when it does act, it brings down the pressure consistently, though it may fail to act in some cases. It takes some time before the patients get acclamatised to this drug. The drug acts fairly fast and the drug effect is evident in the course of 48 to 72 hours. There are many similarities between rawoulfin and reserpin. Reserpin is much more widely known because it is well-advertised and it is available under the trade name of Serpasil. The main draw-back with regard to the use of this drug is that it might cause congestion of the nose. The patient may complain of stuffiness of the nose as if the nose is packed with cotton-wool. The side-effects complained of are dyspone, congestion of the nose and throat, tinnitus and loss of libido— the last symptoms being comparatively rare. Though the symptoms were met with both the rawoulfin as well as with Reserpin, it is more common with Rawoulfin than with Reserpin. One important point of practical importance that should be borne in mind is that the systemic administration of antihistomines will neutralise the alkaloid. To relieve the nasal congestion that these patients complain of is the topical application like privine or any other nasal decongestant. Serpentin, though it does lower the pressure consistently, is not used in practice. It is likely to cause convulsions. The other alkaloids also are likely to cause convulsions in susceptible subjects, i. e. in subjects of epilepsy administration of either reserpin or rawoulfin is likely to precipitate convulsions. These drugs seems to act by causing generalised vaso-dilatation. In addition to acting as a central sedative agent administering rawoulfia group of drugs

makes a person less irritable. The sedation is marked when a person takes this rawoulfia group of alkaloids and sits down to read. He may not make much progress with regard to reading and he is likely to go to sleep if left undisturbed. Since the main action of this drug is to cause vaso-dilatation and they are not of value in cases of arterio-sclerosis. Where the vessels are stiff and are not likely to yield i. e. to undergo vasodilatation. One series of side-effect with the rawoulfia group of alkaloid is the intense mental depression. It may lead the patient to an irresistable tendency to commit suicide, though this is not common--the possibility of such an incident should be kept at the back of the mind, and when the patients exhibit such a symptom, they should be looked after carefully. Sometimes this mental depression occurs with reserpin and not with rawoulfin or vice versa, or the patient may exhibit sensitiveness to all the alkaloids as well as the total root extract. It is only by careful study of the individual case that can arrive at the suitability of the individual to the suitable alkaloid. The highest fall of pressure that has been recorded in my series as a result of administration of rawoulfia has been with regard to systolic 80 mm. Hg. and diastolic 70 mm. Hg. The great advantage being that in spite of such a fall in pressure, patients do not exhibit any untoward symptoms and they are able to carry on the treatment as ambulant cases. The action of reserpin seems to be a bit slow and to record a fall in pressure with reserpin, one should give this drug for a week or 10 days before its full effect is felt. It has also been observed by me that doubling the dose of rawoulfia alkaloid does not necessarily result in proportionate fall of pressure i. e. if one tablet t.d.s. or Rs. 51 has reduced the pressure by 30 mm. systolic by giving two tablets t.d.s, we do not get 60 mm. fall of systolic pressure but only a reduction of 35 mm. Hg. So no great advantage is gained by increasing the dose. In cases where Rs. 51 has failed to bring about the desired result, we have tried R.S. Forts with very good results. It is surprising how well the drug is tolerated by a large percentage of cases. Some of my cases have been on this drug for the last five years, more or less continuously without any adverse symptoms. If this drug is discontinued because of B. P. coming to normal, the pressure may not maintain the normal level for a long time. It will maintain the normal level anywhere between 3 to 6 days after which time the pressure starts going up once again. Once again administering this drug brings down the pressure to normal levels. While R.S. 51 favourably acts in 60% of the cases of hypertension— in 40% of them, it fails to touch the normal and in them one has got to use ganglion blocking agents. R.S. 51 combines very well with the ganglion blocking agents.

After the rawoulfia group of alkaloids, the next important group are the ganglion blocking agents. The three important drugs that are available for clinical trial are (1) hexamethonium chloride or tartrate under the trade name Vegolysen (2) Pentolinium tartrate under the trade name of Ansolysen and (3) Mecarnila-

mide hydrochlor under the trade name of Mevasin. The ganglion blocking agents were introduced for the treatment of hypertension first as hexamethonium compounds. The main disadvantage of this drug was the uncertainty of its absorption when administered by oral route and the failure to act in the malignant hypertension unless given parenterally and the parenteral injection had to be given sixth hourly to maintain a low pressure. The ganglion blocking agents act against sympathetic nervous system causing fall of blood pressure and by their action on parasympathetic nervous system. They cause a variety of side-effects. The important side-effects due to the action against the sympathetic are postural hypotension and nasal congestion. The more effective the ganglion blocking agent, the more certain the postural hypotension. On account of the action of the parasympathetic, it produces dryness of the mouth; in the stomoch if interferes with the gastric peristalsis, production of gastric secretion and it may even cause reverse peristalsis resulting in vomiting. In the intestines, it causes slowing of the peristalsis resulting in paralytic ileus or severe degree of constipation. In the elderly people, particularly where there is a mild prostatic enlargement without any clinical symptoms, administration of these drugs are likely to result in retension of urine. In some people impotency also occurs but it does not seem to interfere with the ejaculation. Most of the side-effects can be controlled by using suitable antidotes, when patients are on these drugs they are advised to spend most of the time sitting or in semi-effect posture. The head of the cot is raised by wooden blocks, so that when the patient sleeps, the head-end is about half to three-fourths foot higher than the leg end and when they sit down on the ground level they are asked to have a support to help when they get up, so that they may have some control of their vertigo. Pylocarpin nitras 1/15 Gr. administered orally once or twice a day controls the dryness of the mouth. Constipation and retention of urine can be controlled by administration of carbechol or by the use of irritant purgatives. The drug of choice is Senna derivatives, particularly Pursennid gives very satisfactory results. Rarely, instead of constipation, diarrhoea may also occur. If impotancy is complained of, the night dose may be limited.

Hexamethonium compounds are not much in use these days. We start our patient on Ansolysen 10 mgm. tablets one t. d. s. before food; every second or third day, the dose is increased by 10 mgm. Morning and night doses are increased, keeping the noon dose, always at a lower level. For instance from 10 mgm. t.d.s. the next appropriate dose is 20 mgm. morning, 10 mgm. noon and 20 mgm. night. In this way, the dose is increased till we reach 80 mgm. morning and night and 40 mgm. noon. I do not generally approve of any higher dose than this when the patient is ambulant. If however, the patient is in the institution where he can be under constant observation, the dose may be increased higher. If a case does not respond to this dose, the chance of recovery in a much higher dose is not very bright. Ansolysen is available in doses of 10 mgm. and 40 mgm. tablets— the dose of 10 mgm. is to start the patient on the drug and 40 mgm. to maintain the treatment.

Mervasin is started as 3 mgm. tablets one t.d.s. before food. The great advantage of this Mevasine is that the drug, even on oral administration, is fairly well-absorbed and acts for a number of hours. The side-effects are more constant in Mevasine than with Ansolysen. With Vegolysen, the great advantage of the ganglion blocking agents is that they combine with rawoulfia group of alkaloids. Where the drug is not giving satisfactory results on oral administration and when the pressure is considerably elevated and also where one feels the pressure is likely to act adversely effected, Ansolysen can be given as injection in 3 mm. dose subcutaneously. A precipitate fall in pressure may sometimes occur, but the drug tolerance is established very soon. Subsequent injections are not likely to give the same precipitate fall. One should be prepared for the onset of acute pulmonary oedema. If such a thing were to happen, noradrenalin should be ready to counter-act the effect of Ansolysen. In 1955, a new compound was introduced in the treatment of hypertension, under the trade name of Apresolin (Hydrazin-ophthalazine). The drug is supposed to prevent the excessive flow of vaso-pressor impulse. It is also claimed that it acts as a vaso-dilator on the renal vessels. It is again claimed by the manufacturers that the drug is particularly of value in the treatment of hypertension of renalorigin. We have used the drug as such without supplementing with Rawoulfia group of alkaloids. By itself, it is comparatively a poor agent in controlling the hypertension. The dose that is required to effect a satisfactory reduction, is very high and is likely to cause a well-marked side-effect, but when combined with rawoulfia group of alkaloids and the ganglion blocking agents, the side effects are not so marked. The dosage also is considerably less. The early side-effects that are noticed are headache, palpitation and tachy-cardia, a peculiar taste in the mouth; sometimes nausea and vomiting. These are not particularly well-marked when the drug is used in combination with the rawoulfia group of drugs and the ganglion blocking agents. Most of the symptoms are also relieved by mild sedation like phenobarbitone. A more serious effect that has been recorded, is the anginal attack or occurrence of oedema of the extremeties (lower) chill and fever. The delayed effects are rheumatoid arthritis like conditions, generalised aches and pains. The tablets are available in the strength of 10 and 50 mgm. 10 mgm. for introducing the drug and 50 mgm. to maintain the therapy. It is advisable to increase the dose by 30 mgm. per week till we reach 50 mgm. thrice a day.

The effects of anti-hypertension drugs can be enhanced by curtailing the salt intake and by administering drugs like Diamox and also by appropriate diet which will aid weight-reduction.

It is too soon to say by how many years we can prolong the life of hypertensive

patients by administration of these drugs. Since only 5 years have elapsed after the introduction of potent anti-hypertensive drugs, there is absolutely no doubt, that the life of the patients on these drugs is made more tolerable, when he is a subject of malignant hypertension. The same cannot be said to be the case when the subject is suffering from essential hypertension. When one is suffering from essential hypertension without symptoms, the drugs are likely to cause side-effects which might make the patient feel that he is subjected to unnecessary torture while he was getting on very well; though the doctor told him that he was suffering from hypertension. Interruption of treatment is likely to result in failure of control. A pressure which has been kept for months at normal levels can be elevated by the patient by neglecting to look after himself even for a few days. Much of the improvement and the progress of the case will depend upon the intelligent co-operation of the patient and the doctor.

Summary : Main causes of hypertension are discussed briefly so that the treatment can intelligently be planned. Three important groups of drugs are discussed in the treatment, i.e. rawoulfia group of alkaloids, ganglion blocking agents and sympathetic blocking agents at the hypothalamic level, i.e. Apresolin. Special stress is laid on the side-effects and the means available at our disposal to control them.

REFERENCE :

1. Proceedings of the staff meetings of the Mayo clinic, Vol. 33, No. 12, June 11, 1958.

* Lecture delivered at the District Medical Association of I. M. A. meeting held at Chingleput.

TREATMENT OF FILARIASIS—(Chronicle of the World Health Organisation; Dec 1957,11, 365 via The Practitioner, London.

Diethylcarbamazine is an 'effective drug' in the treatment of *Wucheriria* filariasis, according to a report published by WHO. It is administered orally, and the usual dosage schedule is 2 mg./kg. daily, three 10 day courses being given at intervals of or three weeks. It acts by promoting phagocytosis of the filariae by the macrophages. The massive destruction of the filariae leads to secondary effects of an allergic nature, such as headache, articular pains and fever. These are partly relieved by acetylsalicylic acid or by antihistamines, 'but, nevertheless constitute an obstacle to mass treatment. It is also used, in a dose of 6 mg./kg. once a month for a year for mass chemoprophylaxis—given to the entire population, including persons whose blood is free from microfilariae. On this regime, in Tahiti the filarial rate fell from 20% to 3% in three years; more than half the positive cases were found in immigrants or people who had refused treatment. The annual cost of treatment was 3 Dollars per inhabitant. Individual treatment by mosquito netting in the home and the wearing of clothing out of doors should not be neglected.

Facial Nerve Paralysis Treated by Combined Sling Operation

BONE GRAFT AND NIKLISON'S OPERATION (CASE REPORT)

By

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Treatment of a case of Facial nerve paralysis by the Fascia Lata Sling operation is well known. This case is discussed because of certain interesting conditions not usually found in routine cases of facial paralysis.

The preoperative photographs shows a Bhori girl of 18 years with long standing facial paralysis on the Right side. Other cranial nerves were normal. Due to the paralysis certain bony changes had occurred in the mandible--on the side of the paralysis the bone had assumed a convex shape and a shorter distance from the angle of mandible to the symphysis than on the normal side by 3/4 inch. The tip of the nose was deviated to the normal side and was due to the overaction of the muscles acting on the tip of the nose. She was referred for plastic surgey.

Ist opertion : It was decided to do the static sling operation using fascia lata and at the same time excise part of the temporal skin thus advancing face skin upwards. Fascia lata was used in figure of eight manner, on the affected side of mouth and this loop attached to the second loop going from the temporalis muscle to the angle of the mouth. The two strands of fascia lata were fixed to temporalis muscle in such a way as to overcorrect the drooping of the angle of the mouth.

Similar strand was passed around the Right upper and lower eyelids using temporalis muscle and its fascia. (Dynamic support).

A month after the first operation it was noticed that the angle of the mouth had dropped a little and hence the second operation combining with the bone graft on the left side was undertaken.

At this operation the fascial sling was pulled up and reattached to the temporalis muscle. A nylon loop (static support) was added extending from the angle of the mouth to the zygomatic arch.

The contour of the mandible was restored by bone graft from the ilium put on as onlay graft on the left side of the mandible.

Result of the operation was satisfactory as the bony deformity of the mandible was corrected.

It was noticed that there was still the strong action of quadratus labii superioris, the zygomaticus on the left side which produced some difference when the patient tried to smtle. Reference to

the work of Jorge Niklison of Argentina*,made the author decide to do this simple operation of cutting the peribuccal muscle fibres of these overacting muscles. It is interesting to note some observations of Dr. Niklison. "In facial paralysis the "sound" side is not normal. On the contrary, there is a pathological tonus and contraction producing overaction of the muscles on that side. If the surgeon limits the correction to only one half of the face and does not heed the other, he will resolve only one half of the problem. In our opinion it is necessary to lessen the excessive contractions of the overactive muscles of the unparalysed side in order to get the face as balanced as possible."

Under local anaesthesia the incision is made in the naso-genial groove. The muscle fibres of the quadratus labii superioris and zygomaticus are identified and about 1 mm. of the length of muscle is excised. Skin is sutured without drainage.

The result of these operations is seen in the post opertive photograph--it will be noticed that the smile has been diminished and that the face is almost equalised on the two sides. Now we may say that the patient has exchanged her former grimace for a soft smile. She is satisfied because people do not watch her anymore as they did before.

Fig. 1. Before *Fig. 2. After*

Fig. 1. Severe overaction of the normal side muscles.

Fig. 2. Balanced appearance of the face after operations.

Conclusion—Plastic Surgeons are agreed that the results of correction of facial paralysis are not satisfactory. The operations have to be planned to suit each individual case. This case's result would not be complete without the bone graft operation for the mandibular defect. Fortunately the timely appearance of the Niklison's technique in 1956 has helped this case to take one more step forward towards normal. This case is presented because the treatment has deviated from the routine course with the addition of the onlay bone graft as well as the operative procedure on the unaffected side (Dr. Niklison's original work has won him the 1955 award Essay contest of the foundation of American society of plastic and Reconstuctive surgery.)

* Contribution to the subject of Facial Paralysis—Jorge Niklison, M.D. American Journal of Plas. & Recon. Surgery. April 1956.

Vitamins in Dermatology

By

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GENERAL DISCUSSION:

Vitamins are essential factors for the normal conservation of cells.

VITAMIN A

This is known as antixeropthalmic and anti-infective Vitamin. Xeropthalmia presents one aspect of deficiency syndrome. The term anti-infective, originates from the mis-conception of the properties of the Vitamin in relation to infective processes. It should not longer be employed.

VITAMIN INCLUDES A_1 & A_2

The naturally occurring precursors knonwn as pro-vitamin A_1. Vitamin A_2 predominates in fresh water fish and A_1 in salt water fish. Both these vitamins can be derived from carotene. Biologically A_2 has same functions as A_1 but little significance is attached to A_2 in the human body.

Carotenoid pigment as betacarotene, alpha carotene, gamma carotene and crypto-xanthine can be converted to Vitamin A. They occur widely in the plant Kingdom.

The international unit of Vitamin A activity is 0.6 milligram. Bile is necessary for absorption of carotene though Vitamin A is absorbed in its absence to a lesser degree than normal. The absorption is in the duodenum and jejunum and passvia lacteals to the thoracic duct, carotene is converted to Vitamin A in the liver by carotinase.

In liver holds 95% of Vitamin A; other sites are the skin, muscle and bone. Normal kidney does not contain Vitamin A but in renal disease it is demonstrable. The discharge of Vitamin A from the liver to blood takes place in the presence of adrenaline, strangely alcohol exerts a similar effect. The normal value of plasma vitamin A is 100 to 300 international units. The normal total carotienoid content of plasma is 50 to 300 micrograms.

METHODS OF ESTIMATION OF VITAMIN A

1. The quantitative spectroscopic analysis.

2. Use of 25% antimony chloride in chloroform to produce blue colour.

Man obtains the Vitamin A from pro vitamins as well as vitamin itself. Carotene (Provitamin is derived from sweet potatoes, carrots and yellow turnips, lettuce, cabbage, green peas, bananas and tomatoes.) The vitamin A is derived from liver oil and butter. Normal Vitamin A requirement is 5000 I.U.

PATHOLOGY OF VITAMIN A DEFICIENCY:

Atrophy of the epthelial structures ensues in a deficiency state and replacement with a stratified keratinised layer.

1. Partial atrophy of the intestinal glands.

2. Epithelial changes in the conjunctiva, cornea, lacrymal glands and Meibomian glands, Epithelial cells with chemical role as liver and renal tubulesten to escape. Certain stratified epithelial cells e.g. renal pelvis, ureter and bladder become hyperkeratotic.

Disturbance of function leads to diminished risistance to bacterial invasion.

Skin.—Dry horny appearance known as phrynoderma.

Eye:—Photophbia, burning sensation Bitot spots, Keratomalacia.

DIAGNOSIS OF VITAMIN-A DEFICIENCY.

1. Estimation of the plasma level of Vitamin A and carotene.

2. Vitamin A tolerance Curves:— A large dose of Vitamin A orally and the temporary rise of with ensuing drop of Vitamin is charted in the form of tolerance Curve during the 24 hour period. The plasma concentration returns to normal by this time. The conception is that if liver stores are low only small elevations take place where as if the hepatic content is high large rise will take place.

3. Dark adaptation:— The visual purpule in the retina is broken down in the presence of light and is subsequently regenerated in darkness. Visual purple or rhodopsin is a conjugated caroteinoid protein. A continuous supply of vitamin A is necessary for reformation of visual purple. Hence in Vitamin A deficieney there is impairment of vision in dimlight producing night blindness.

4. Examination of pathological changes in the epithelium.

Treatment of Vitamin A deficiencies. In dermatological manifestation as much as 250,000 units of Vitamin may be, required.

In other cases 100,000 units will suffice.

Prolonged treatment is essential.

Carotinemia and hypervitaminosis A: The ingestion of large quantities of carotene containing food stuffs may produce yellow colour in skin, Xanthoma cuits in nasolabial folds and palms.

Myxoedematous patients on a normal diet differ may develop the syndrome but thyroid therapy induces its disappearance.

Diabetes and other disorders of lipoid metabolism produce excess of plasma carotene and carotinemia.

SYMPTOMS OF HYPERVITAMINOSIS A.

Hepatosplenomegholy, hypoplastic anaemia, leucopenia, and advanced skeletal development.

VITAMIN B_1

Vitamin B_1 is absorbed from the small and large intestine. From the blood stream the liver and other tissues store it as co-carboxylase after phosphorylation. A reversal of this process as required co-carboxylase being dephosphorylated producing free Vitamin B_1.

The co-carboxylase in an ester of thamine called thiamine pyrophosphate. Normal levels in blood (1) Free Thiamine O. 5 Mcg % (2) Cocarboxylase 3 to 16 Mcg%.

ESTIMATION OF VITAMIN B_1 CONTENT.

Biological Methods: 1. Brady cardia test in rats.

2. Paralysis in pigeons maintained on a polished rice diet.

3. Chemical Procedures:—(1) Thiochrome methods:—Vitamin B_1 is absorbed on Fuller's earth, eluted and converted to thiochrome by alkaline Oxidation. (2) The diazo test measures the free Vitamin.

SOURCES OF VITAMIN B_1

The bulk of the Vitamin B_1 is contained in the outer layer of rice, wheat, cereals. Vegetables and fruits contain only small quantities. Dried brewer's yeast is an excellent source of Vitamin B_1.

Action of Vitamin B_1:- As Cocarboxylase it acts on carbo-hydrate metabolism.

Lactic acid ⟶ Pyruvic acid ⟶ Oxidation
↑ dehydrogenase ↑ co-carboxylase

Pyruvic acid in blood increases in Vitamin B_1 deficiency. Excess of pyruvic acid inhibits the break down of lactic acid, and lactic acid accumulates.

Another action of thiamine is in its action in the conversion of fat to carbohydrate. Normal human requirement is 1.2 to 1.8 mgm% Vitamin B_1 deficiency produces general symptoms as anorexia, headache and peripheral neuritis.

DETECTION OF VITAMIN B_1 DEFICIENCY

1. Blood Thiamine level.

2. Urine excretion after administration of Thiamine: There is practically no excretion in Thiamine deficiency.

3. Muscle-biopsy for content of Thiamine.

4. Blood lactic acid:— Normal Blood lactic acid is 10 to 20 mgm%.

5. Blood pyruvic acid:— Normal value 1.3 mgm%.

6. Urine pyruvic acid increases in Vitamin B_1 deficiency.

NICOTINIC ACID AND ITS AMIDE

The urinary excretory products of Nicotinic acid amide are known as F_1 and F_2. With UVR F_1 gives a violet colour and F_2 a silver bright flourescence. Other derivatives of Nicotinic acid in Urine are (1) Co-enzymes I and co-enzymes II. C-enzymes I and II are oxidative enzymes.

Nicotinic acid deficiency produces skin lesions, oral mucous membrane involvement with gastrointestinal deragement. Nicotinic acid amide is found in liver, yeast kidneys, and green vegetables. Daily requirement 10 to 15 mgm.

DETECTION OF DEFICIENCY.

(1) Detection of Nicotinic acid content Normal is 0.438 mgm%.

(2) Excretion of Nicotinic acid in urine.

Nicotinic amide is found as Co enzyme I (DPN) It is usual as it acts as intermediate carriers for the hydrogen released from various substrates by the dehydrogenase enzyme. Nicotinamide is a co-enzyme for the following reactions.

(1) Lactic acid → Pyruvic acid + 2 H

(2) Pyruvic acid + H_2O = Acetoacetic acid CO_2 + 2H

(3) Betaoxybutyricacid → Acetoacetic acid + 2 H.

Co-enzyme II is a corresponding coenzyme and is useful in accepting

Hydrogen in Kreb's cycle and also in glutamic acid metabolism.

RIBOFLAVIN.

This is a yellow pigment.

Sources :—Meat, milk and whole meal flour. Riboflavin in combination with a protein form adenosine dinucleotide. They catalyse the release of hydrogen from various substrates. The hydrogen passes from the flavin to cytochromes and finally with oxygen to form water.

Hypo riboflavinosis triad is angular stomatitis, glossitis and scrotal dermatitis. Normal requirement is 1.5 mgm daily. Normal blood content is 0.35 to 0. 45 mgm%.

Choline and Betaine : — Helpful in supplying transferable methyl groups. They are essential for normal nutrition since it supplies methyl groups for the formation of phospholipids. Betaine is is only one third as effective as choline. Choline synthesis is constantly taking place in the body. Choline is a lipotropic substance and hence its deficiency produces fatty changes in the liver.

PANTOTHENIC ACID.

Sources :—Liver, Kidney, Egg, Cereals and yeast. Human requirement 3 to 4 mgm. In animals, deficiency produces greying of hairs.

Injection of pantothenic acid increases Riboflavin content and vice versa. In combination with thiamine it is helpful in the oxidation of pyruvate, the synthesis of acetyl cholne is helped by pantothenic acid. Pantothenic acid has been found in burning feet syndrome. (Gopalan's Syndrome)

PYRIDOXINE (VITAMIN B)

Sources :—Yeast, liver, muscle, legumes, rice polishings. Human requirement 2 mgm per day.

Pyridoxine deficiency produces convulssions in experimental animals and also serotonin deficiency.

Pyridoxine is helpful in transmission of aminoacids namely the aminoacid synthesis from non-protein sources e.g. Ketoacids.

FOLIC ACID :

Sources :—Spinach, Yeast and liver. Folic acid is converted to folinic acid and this initiates the formation of thymine from the NH and carbon sources in nuclear metabolism. Folic acid is helpful in macrocytic anaemias.

Vitamin B 12 is an extrinsic factor and is found in yeast and marmite.

VITAMIN C (Ascorbic Acid)

Sources :—Fresh fruits and green vegetables. Normal Vitamin C in plasma is 0.6 to 1.8 mgm. Daily requirement 50 to 75 mgm.

DETECTION OF VITAMIN C DEFICIENCY.

1. *Vitamin C content in blood.*

2. *Intradermal test.* The injection of dye substance which can be decolourised by Vitamin C. The dye used is dichloro phenol-indophenol. This produces a blue colour and with a normal content of Vitamin C in skin; the colour disappears in 10 minutes.

3. *Urinary excretion* :— Normal is 20 mgm per day.

4. *Capillary fragility test of Rumpell Leed* :—

Gothlin employed a pressure of 50 mm. of mercury for a period of fifteen minutes, and considered that a petechial count greater than 6 in a circular area 60 mm. in diameter, could be regarded as abnormal.

Pathological features ; Vitamin C deficiency produces

1. Increased capillary permeability.
2. An interference with normal growth of R.B.C. producing orthochromic anaemia.
3. Bone formation affected in the epiphysical cartilage areas.
4. Normal healing of wound delayed.

VITAMIN D.

No Vitamin D_1 :- Vitamin D_2 (calciferol) and Vitamin D_3 are the two forms.

Sources :— Eggs, butter, fish, Liver oil, muscle meat. Requirement 250 International Units. Vitamin D increases Calcium and Phosphate absorption from intestines. It promotes calcification of bones. In the absence of Vitamin D, the bones show excessive preparation for ossification and defective accomplishment of it.

Large amount of Vitamin D will produce anorexia nausea vomiting, diarrhoea sweating, frequency of micturition, muscular weakness lassitude, headache and depression. Metastatic calcification may occur in the kidneys, myocardium and bronchi.

VITAMIN E.

Three members of this group have been isolated, alpha, beta and Gamma tocopherol. Synonyms of Vitamin E include factor 'X', anti-sterility factor, reproductive Vitamin and anti-encephalomalacia Vitamin.

Sources :—Vitamin E is abundant in wheat germoil.

Vitamin E deficiency:—

Produces in animals atrophy of the semniferous tubules in the males and in the female rats, the foetus develops normally up to the 20th day and dies latter.

Vitamin E has been found useful in muscular dytrophy.

VITAMIN K

Vitamin K is converted into prothrombin which is essential for normal clotting of blood. Prothrombi contains two components, prothiombin A, which disappears from oxalated stored blood, and prothrombin B which disappears from cholesterol blood and probably from the blood of Vitamin K dificient subjects.

VITAMIN P.

This contains two flavanone glucosides, hesperidin and Eriodicton. Vitamin P is found in citrus fruits, lemon peel and orange peel. Vitamin P is helpful in combating increased capillary fragility and hence it is useful in purpura.

Vitamin F & F_1:— Are terms used for essential unsaturated fatty acids as Linoleic acid, linolenic acid, arachidonic acid, and linoleyl alcohol. They are active in the treatment of the fat-deficiency syndrome of animals but only linoleic and arachidonic are considered essential, for either alone can relieve the deficiency state.

VITAMINS IN RELATION TO DERMATOLOGY.

Vitamin A:—Deficiency produces Keratotic plugs in the hair follicles and hyperkeratosis of the surface epithelium.

The earliest clinical changes are dryness, and roughness of skin and at a latter date, the dry papules appear at the pilosebacious orifices. The surface of the papule may become flattened in the latter stage. The dryness is due to impairment or loss of function of the sebacious and sweat glands. Changes in the Nails as brittleness and transverge ridging have been reported. The skin condition is called Phrynoderma, Toad skin, and icthyosis follicularis. The present opinion is that this skin condition is produced not only by Vitamin A deficiency but also by lack of unsaturated essential fatty acids.

THE USE OF VITAMINS IN DERMATOLOGY.

Vitemin A :—

1. Vitamin A is found useful in Darier's disease. (Keratosis follicularis.)
2. Miliaria Rubra.
3. In pityriasis Rubra pilaris :— In this condition the clinical finding is the presence fine acuminate horny follicular papules.
4. Arsenical Keratosis.
5. Corns.
6. Icthyosis.

Codliver oil has been extensively employed externally in the treatment of wounds, burns and ulcers due to the stimulating properties of Vitamin A content.

Vitamin B_1:—

Vitamin B_1, with other members of B Complex has been found useful in seborrhoeic affections. Psoriasis has been found to improve with B_1.

Vitamin B_2:— Hypo Riboflovinosis triad is characterised by scrotal dermatitis, angular stomatitis and glossitis conditions respond to B_2.

Nicotinic acid:— The cutaneous manifestations of Pellagra are characterised by symmetrical Crythema hands and feet with reddish brown pigmentation which latter show thickening. The border of the lesion is characterised by hyperkeratotic line of Merck. The neck shows symmetrical eruption around called Casal's necklace. There is also associated glossitis and stomatitis. The condition responds to riboflavin and nicotinamide.

Pantothenic acid :— And paraminobenzoic acid have been found useful in grey hairs in experimental animals and hence they are being tried in human beings. *PABA* is useful in Vitiligo. Para-aminobenzoic acid cream is useful against sunburn. *Pyridoxine* produces a marked improvement in seborrhoeic condition and Acne.

Biotin:— This is called Vitamin H or skin effective Vitamin. Dr. Sydenstrecker has shown that biotin deficiency produces a triad as scaling of the skin, greyish pallor of the skin, atrophy of the lingual papillae. Sources are eggs, liver, yeast and peas.

Inositol:— Responds to pruitic scaly eruptions in doses of 1 gm daily.

Vitamin B_{12}:— Has been found useful in postherpetic neuralgia.

Vitamin C:— Converts melanin into a lesser pigment called melanoid and is hence useful in melanoderma. In the prevention and treatment of sensitivity to heavy metals, vitamin C is useful.

Vitamin D:— Vitamin D_2 or Calciferol has been found useful in Lupus. Vulgaris.

Vitamin E:— It has been used in Lupus eruthematosus, sclererderma and Lichen sclerosis in daily doses of 120 to 600 mgm.

Vitamin F :— The unsaturated fatty acids along with Vitamin A is helpful in phrynoderma.

Vitamin K:— A diminished level of prothrombin is produced in chronic urticaria and hence Vitamin K has been found beneficial.

Vitamin P:— Purpuras have responded to Vitamin therapy.

Vitamins in cosmetics :— Due to the beneficial effects of Vitamin A in phrynoderma and papular dry skin and also that blackheads are common in this condition Vitamen A is incorporated in toilet creams. Vitamin A can be absorbed through skin.

Bicknell points out that Vitamin B_1 has been given in alopecia. Pruritis and pyodermatoses. It is not a constituent of toilet preparations.

Vitamin B_2:— Is useful in angular stomatitis and scrotal dermatitis. It is not a constituent of toilet preparations.

Pyridoxine:— Has been found useful in cheilosis. In combination with Vitamin B_2 it is found useful in seborrhoeic dermatitis.

It has been found useful, if percutaneously applied in creams and snows.

Vitamin C:— Can be absorbed through skin. It has been found useful in exfoliative dermatitis and in melanoderma.

Vitamin D_2 :— May be incorporated in creams but has been of no value applied externally.

UNSATURATED FATTY ACIDS IN DERMATOLOGY

Vitamin F or essential unsaturated fatty acids:—

The deficiency produces dryness of skin, brittleness of hair to develop alopecia, brittleness of nails with tendency to produce ridging. Ointment rich in unsaturated fatty acids show improvement.

Recently the naturally occurring unsaturated fatty acids as undecylenic acid, propionic and caprylic acid have been found beneficial externally in Tinea pedis.

In the tuberculosis control and training projection Hyderabad six sub-centres are in operation, providing, a good framework for a domiciliary service. The training of home visitors is going ahead, laboratory has been set up and temporary radiological arrangements made pending the arrival of full-scale X-ray equipment.

—Points by National Programmes (Issued W.H O. South East Asia)

Mental Health Aspects of the Peacefull Uses of Atomic Energy

—Warld Health Organisation

In the minds of people everywhere, atomic energy remains a threatening and mysterious force, interpreted very often in magical rather than rational terms, and fraught with irrational fears and irrational hopes of serious social and individual consequences.

This is one of the findings of a Study Group called recently to advise the WHO Director-General on the mental health aspects of the peaceful uses of atmoic energy. In this group, under the chairmanship of Professor Hans Hoff of Vienna, were representatives of disciplines as different as psychiatry, atomic and radiation medicine, public health, social anthropology, and science journalism.

The experts examined reports from all over the world concerning the emotional impact of atomic energy developments as reflected in everyday life, public statements, the press, letters to atomic, health, political or religious bodies, as well as the results of clinical enquiries.

In contrast to the tremendous scientific and technical achievement of atomic science today—the intellectual or vocational prerogative of a few—the great mass of people, according to the Study Group, belong to the "childhood of mankind"

"Man's anxiety about his own search for knowledge and for power is reflected almost universally in myth and legend... the psychological experiences of humanity since pre-history, which have been handed down through hundreds of generations and exert their influence in each new generation."

Examples quoted are the ancient Greek stories of Prometheus, who stole fire, the prerogative of the gods, and was terribly punished for this act of presumption; Pandora, who wantonly unleashed forces she could not control, and left mankind only with hope, and Faust, evoking the Devil in order to assume the power of God and (with relevance in the Sputnik age) the ancient Egyptian saying: "When man learns what moves the stars, the Sphinx will laugh and life will be destroyed."

"There can be no doubt about the universality of this feeling of man's punishment for presumption, and it finds an arresting parallel in that universal experience of all mankind—that of being a child."

From the point of view of individual development, being a child means being helpless and dependent upon powers that seem capable of giving almost infinite benefits or ultimate punishment. Children who come into conflict with power are prone to have fantasis of the most destructive kind. Even adults in an emergency, can relapse into primitive

forms of thought and feeling—and that is characteristic of much of the psychological reaction of people to nuclear energy.

BRAIN DAMAGE FROM RADIATION?

In the first chapter of its report, the Study Group examines the question of harmful effects of radiation on brain function. Data are scanty. Work, however, has shown that though nervous tissue is among the most resistant of all tissues, it can be severally damaged by high doses of radiation which, however, the subject can survive. Experimental work on animal embryos and young animals has confirmed the radio-sensitivences of nervous tissue during the developmental period. The adult brain, however, is exceptionally resilient to radiation.

"The conclusion to be drawn is that with the low dosages of radiation to be encountered in the peaceful uses of atomic energy, the organic brain effects so far observed are of minor or no importance".

SOCIAL AND ECONOMIC IMPACT OF ATOMIC ENERGY

The Study Group examined the stresses which the advent of atomic energy will introduce in the world. In advanced countries, a second industrial revolution might interfere with whatever social equilibrium and stability has been achieved, often at great cost. This is particularly so if added to other recent technological innovations which have accelerated the pace of change and, says the report, "societies have a certain threshold of tolerance for rate of change which, if exceeded, leads to some measure of social disorganization."

Still greater concern is expressed about the effect upon the so-called underdeveloped areas, where the advent of atomic energy, to the extent that it accelerates the process of industrialization, can bring an increase in existing social problems. There are still other dangers:

"Where exaggerated hopes have been aroused, there may be disappointment and disillusionment when nuclear installations do not prove feasible or do not produce at once a miracle in the form of a higher standard of living. The repercussions from eventual disappointment may be severe and take the form of hostility against those populations which draw major benefits from atomic energy."

Much will depend on the attention given to human factors in planning and in development, the experts say.

IRRATIONAL FEARS AND IRRATIONAL HOPES

The emotional response provoked by the advent of atomic energy, as mentioned earlier, while partly similar to those produced by other forms of technical change, are often pathological, partly because of the circumstances in which atomic power has been introduced, and partly because of its very nature. This constitutes perhaps the most important mental health aspect of the present situation, the experts state.

"Evidence about emotional reactions to atomic matters is frequently found in the day-to-day conversation of people. Disagreeable weather is freely blamed on atom bomb tests and the failure of the harvest likewise. Fears of the fall-out, of the disposal of atomic waste of the pollution of water and milk supplies; fears of sterility or of harmful genetic effects are direct expressions of anxiety. These fears conflict with many official announcements put out about risks and safety measures."

The Study Group emphasizes that it would be dangerous to ignore that the emotions aroused in the public by the peaceful uses of atomic energy cannot be separated from fear and anxiety stemming from the unclear bomb.

The anxiety-producing qualities of atomic energy are ascribable to the peculiar nature of radiations–unseen, unheard, untasted, unsmelt, unfelt and, as far as the individual is concerned, uncontrolable—from an almost infinitely small source. Of all these aspects the most terrifying is perhaps that of a tremendous power that may get out of control and the fear that, even if the atom does not blow up the world, it will trigger off a biological chain-reaction; fall-out, or atomic waste will poison water, soil, fish, land animals plants and thence people, their children and their children's children.

This is a deeper and more subtle fear than that of the unleashing of energy that might destroy the universe...The significance of the almost universal grouping together of fall-out and atomic waste despite their widely different origins will not escape the reader."

ON WHOM THE BLAME?

Surrounded by confusion and fears, people immediately look for a scapegoat. "The scientist" has lost his authority. The public unable to distinguish between the physicist, biologist, etc., or between a scientific fact and a scientist's opinion, is confronted with apparent contradictions. Widespread publicizing of mistrust and disagreement among scientists, not only in connection with nuclear energy, but also in such matters as polio vaccine and the carcinogenic effects of tobacco, enhances this effect.

"Scientists do not make the task easier when they vacillate between statements limited to their scientific competence and those which have the mantle of science but which are actually expressions of evaluation and even policy decisions."

The relations of the scientists to the politicians also generate anxiety, because of the uncertainty as to who wields the power and how.

"In one sense, the political leader has power over the scientist. But in another, he is dependent upon the scientist, and hence in his power....The advent of nuclear power has taken the ultimate strength out of the hands of services which are under political control and placed it in the hands of the scientist... The scientist is a civilian and not in the direct service of the State, and in his role of scientist owes his first allegiance to scientific truth. No social institutions have been developed to hold him individually in thrall to the civilian power; as a scientist he has had no special training in discipline and obedience. It is

not unnatural, therefore, that political leaders sometimes develop intense hostility to the scientists and so promulgate unrealistic decisions in attempts to control the scientific situation in the teeth of the scientists."

It is pointed out that few, if any, political leaders have had scientific training to enable them to see the ultimate implication of scientific work. The effect is general bewilderment and "a suspicion that the political leader, instead of being master of the situation is, in fact, caught between the scientist and the next election."

The Study Group states that this relationship between the scientist and the politician requires serious study.

THE PRESS

Since the public mainly learns about atomic developments from the press, the role of the journalist appeared extraordinarily important. The experts were impressed by the general standard of integrity with which journalists handled atomic energy news. Yet this news was often regrettably presented under scare headlines which left an enduring impression, even if the substance of the story was sober and even reassuring. The tacit newspaper principle is that "bad news is good news" and this has profound implications for mental health and morale.

MENTAL HEALTH TASKS

The WHO experts felt that to complexity of underlying emotions in the changing environment of the second industrial revolution brought about by the atomic age needed to be recognized more widely among leaders of thought and action. The first task, they said, seemed to be to establish what might be termed a culture of change, in which change and re-orientation could take place without upheaval. The chief effort would have to be directed towards securing for adults a greater intellectual grasp and thus a better understanding of the new situation. The Group felt, however, that the main duty of the present generation was towards its children. The upbringing must enable them to put up with insecurity and to face reality. The upbringing must be free from anxiety and hate, producing in individuals self-reliance and a sense of responsibility towards others. And those who held responsible position in public life—doctors, teachers, the clergy, the authorities—must be educated in mental health requirements.

As regards local action, the Group discussed a draft plan for the education of the community in matters pertaining to atomic energy. In essence, the idea is to form small teams consisting, for example, of a psychiatrist, a psychologist, a sociologist and a journalist. This team would study local conditions and contribute to the planning of new atomic enterprises and also to their acceptance by the people.

The Study Group also made a number of specific suggestions concerning research and work to be done in connection with mental health and atomic installations, the production of atomic power, and medical use of radiation.

In conclusion, the Group stated that its findings were in no way alarming. It was, however, convinced that they were concrete enough to warrant that attention of those in authority. The group hoped that persons in authority would be prepared to accept its conclusion that the behavioural sciences could make a valuable and concrete contribution to the adaptation of mankind to the advent of atomic power, making it indeed as painless and harmless as possible and allowing man to reap a rich harvest from the seed his inventive genius had sown.

The WHO Study Group on the Mental Health Aspects of the Peaceful Uses of Atomic Energy included :

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GLEANINGS FROM THE MEDICAL PRESS

ACUTE RESPIRATORY DISEASES IN THE YOUNG CHILDREN: (L. A. Nichols. B, M. J., 2: 1434. 1957)

"Research in my own practice on the problem of the catarrhal child has led me to these tenets. Firstly, the primary reason for the admission of children to hospitals with varying phases of sino-laryngo-tracheo-bronchitis is my own anxiety about prognosis. The amount of anxiety is more related to the agitation, anxiety, and despair of the parents, with their increasing demands, than to the course of the illness. The necessity for further advice and treatment in hospital, 'the dilution of responsibility', is resorted to, so relieving the child, the parents and the practitioner from an acculmulated tension. Secondly, the largest group of children admitted to hospitals belong to the over-protected type. Subdivisions of this type are the overindulged child, the result of the mother attempting to make up for what she missed in her own happy childhood, or the child towards whom the mother is basically hostile but proves otherwise to the outside world by spoiling overlove. Another type is the child whom the mother uses as her love object, concealing her unconcious estrangement from her husband and producing, if she can, the timid, dependent, cllnging child. The mother in attempting to mould the child according to her own complexes must inevitably meet resistance as the child reaches out for independence. If she succeeds the the child may even enjoy his dependency and sickness. Perhaps in these spheres more information could be obtained from research into the reasons why the number of boys admitted to hospital is greater than that of girls."

TORSION OF THE STOMACH AS A CAUSE OF VOMITING IN INFANCY. (Eek, S., and Hagelsteen, H., Lancet, 1: 27-28, 1958)

A characteristic shape and position of the stomach in 54 children, who suffered from vomiting, were found on radiological examination of infants during the course of six years. The body of the stomach was raised with the greater curvature as the highest point and the lesser curvature as the lowest. The posterior wall of the stomach pointed forward, and the pyloric antrum and the pylorus with duodenal bulb were directed more or less straight down. The middle part of the transverse colon was interposed between the liver and the anterior abdominal wall and came above and in front of the stomach, often even just under the diaphragm. The twisting did not occur more than 180°. It may delay gastric emptying, interfere with peristalsis, and probably upset the circulation of the blood in the stomach.

Vomiting begins soon after birth in this condition, but it may also begin later. The maximum age was three years. The symptoms begin as gulps which increase to vomiting. Vomiting did not always occur immediately after feeding; its frequency and force varied but usually it was daily occurrence. 18 gained weight satisfactorily inspite of vomiting daily. These patients did not present so serious a clinical picture as infants with congenital pyloric stenosis; but is often impossible to distinguish clinically between the two conditions.

In twisting of the stmoach a pyloric tumour, cannot be palpated. The torsion is best seen when the patient is examined in the erect position. For this the infant is placed in a special cotton garment, suspended by four straps, which at the same time hold the head erect. The torsion of stomach may sometimes be intermittent. For treatment the patient should be placed prone with the upper part of his body lowered, or alternatively merely placed on his right side. Usually vomiting will cease immediately or become noticeably less. In no case has it been necessary to untwist the the stomach surgically.

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"CARDRASE A NEW CARBONIC ANHYDRASE INHIBITOR IN GLAUCOMA"—Adolph Posner; New York A.J.O. Vol. 4 Sec. 2, 225 1958.

Cardrase (6-ethoxybenzothiasole—2 Sulphonamide.) a new corbonic anhydrase inhibitor (Upjohn Company) and an effective diurestic when administered orally has been tried in cases of glaucomas because it slowers theIntra-ocular tension.

The author has tried this drug in 20 cases (15 Primary and 5 Secondary Glaucomas) and has found it to be twice as potent as Diamox and equally well tolerated exeept in two patients who had to discontinue its use because of side effects particularly nausea, weakness and mild paraesthesia of fingers. Both these patients previously were unable to tolerate even minute doses of Diamox. But majority of these patients have showd no deleterious side effects, and cases of simple primary glaucomas have been even using this drug for a period of 6-12 months.

Cardrase may administered orally in dosage of 62·5 to 125 Mgm two to four times daily. Its action is similar to that of Diamox and has a tension lowering action in glaucomatous eyes regardless of the nature.

—Dr. J. M. Pahwa, Sitapur

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EXENTRATION OF THE ORBIT WITH TRANSPLANTATION OF THE TEMPORALIS MUSCLE. A. B. Reese, A.J.O., Vol. 45, 386, 1958.

Usually after exentration of the orbit, the wound is either allowed to granulate or covered with skin Thiersch Graft. In both these cases dressings are necessary for longer time ususally 2-3 months. Moreover they have objection of leaving the deep unsightly orbital cavity.

To solve this problem, the author has employed temporalis muscle together with deep facia though this idea has been borrowed from Naquin. By this procedure considerable amount of the orbital space can be filled up and it leads to a cosmetic result which is much more acceptable to the patient. Skin of the upper and lower lids with their cilia can be retained making possible a restoration of the orbit in which a prosthesis might be worn.

He has done 5 such exentrations nicely repaired by his method. two of these were for Rhabdomyo sarcoma of the orbit-one for embryonal myosarcoma—one for malig. nant melanoma of the orbit and the other of the conjunctiva. In one of those cases (Not reported in this paper) he inserted a round gold ball implant into the apixo of the orbit. It has been well tolerated and may be a worthwhile addition to his technique – which he has nicely described and is well illustrated by 6 diagrams.

—Dr. J. M. Pahwa, Sitapur

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CYCLIZINE (Marezine) HYDRO CHLORIDE IN POST-OPERATIVE CATARACT SURGERY. H. Lorhan & V. Holman A.J.O. Vol. 45/446-47 March 58.

In order to solve the vexing Problem of nausea and vomiting following cataract surgery because it may cause wound rupture, prolapse of Iris, etc., various drugs have been used, but the authors have found Marezine used as a premedication (50 mgm Intramuscular injection) one hour before the operation very satisfactory. They have evaluated their results in 373 cases and found that the percentage of vomiting after cyclizne fell from 13·71% to 5·16% only. No side effects were seen with this drug. Cyclizine is a white crystalline powder-readily soluble in isotonic saline solution. Chemically it is N. Benzhydryl N. Methyl-piperazine monohydro-chloride. It possesses an atropine like and antihistamine like actions.

—Dr. J. M. Pahwa, Sitapur

RESEARCH & LABORATORY NEWS*

VARIDASE BUCCAL TABLETS INTRODUCED BY LEDERLE

A buccal tablet form of Varidase streptokinase streptodornase which reduces inflammation and swelling due to tramua or infection has been introduced by Lederle Laboratories Division, American Cyanamid Company. Buccal Varidase is an enzyme product which provides a readily acceptable dosage form to patients and is used in the treatment of abscesses, burns, cellulitis, edema, hematoma, uveitis, sinusitis, chronic bronchitis, chronic bronchiectasis, thrombophlebitis and leg ulcers.

The new mint-flavored product is allowed to dissolve in the patient's mouth and is absorbed into the body. Unlike the injectable form, Varidase Buccal does not require regrigeration.

Varidase Buccal acts, as does the parenteral form of Varidase, to activate a body process which helps dissolve fibrin deposits in areas inflamed as a result of infection or trauma and also reduce swelling, pain and discomfort. Where infection exists or may be expected, Varidase Buccal is used in conjunction with an appropriate antibiotic such as Achromycin tetracycline.

Since Varidase acts through the blood stream, it is effective in remote inflammations or infections.

The new product was recently employed in the treatment of 62 conditions in 57 patients by Dr. Joseph M. Miller and associates of the Veterans' Administration Hospital, Fort Howard, Md. Reporting in the February 1st issue of the Journal of the American Medical Association, they indicated that 55 conditions such as abscess, cellulitis, edema and thrombophlebitis responded excellently to buccal treatment while only three results had to be classified as poor. All patients were treated concurrently with antibiotics.

The usual dosage of Varidase Buccal is one tablet, four times daily for a minimum of three days, under the guidance of a physician. The average course of therapy is five days and dosage for as long as several weeks may be necessary in certain chronic conditions. Since Varidase is inactivated by the gastric juices, the tablets should not be chewed or swallowed.

Ease of administration of the buccal form is expected to increase the usefulness of Varidase to the general practitioner. Because Varidase has been found most effective when administered several times daily, the injectable form has been used primarily in hospitals.

Clinical trials with Varidase Buccal to date have indicated a lack of mucosal irritations and an absence of side effects including allergic manifestations.

Each Varidase Buccal Tablet contains 10,000 units of streptokinase and 2,500 units of streptodornase. The product is supplied in bottles of 24 tablets.

DALLI'S LATEST WORK SYMBOLIZES MAN'S ATTAINMENT OF TRANQUILITY

Spectacular Salvador Dali. who made the limp watch the symbol of surrealist art, displays a scale model of his latest creation, a 60-foot butterfly chrysalis—the insect's shell during the transition period. Called "Crisalida", the new work has as its theme man's transition from anxiety to tranquility, with symbolic figures in the creature's vast interior representing the process.

More than 13,000 physicians were given a chance to walk through the exhibit and evaluate Dali's concept when the work was unveiled at the recent American Medical Association convention in San Francisco, California. The project was commissioned by the manufacturer of the tranquilizing drug "Miltown" distributed world-wide outside the United States and Canada by Lederle Laboratories Division, American Cyanamid Company.

Dali explained the connection between the chrysalis and the drug thus: "The outer structure of Miltown is that of a chrysalis, maximum symbol of the vital nirvana which paves the way for the dazzling dawn of the butterfly, in its turn the symbol of the human soul."

INDIAN SCIENTIST DISCOVERS ANTI-TUMOR COMPOUND IN AMERICA

A Chicago report dated September 10 says that the isolation and concentration of an anti-tumor compound active against some forms of cancer in animals was reported by Dr. K.V. Rao of the Cancer Research Centre operated by Pfizer company.

The drug designated E—73, was described before the Medicinal Chemistry Section of the annual American Chemical Society meeting here.

E—73 belongs to the same chemical family as actidione, an antibiotic which is made by the same micro-organism (*Streptomyces griseus*) which produces streptomycin. Actidione, which was in clinical use from 1952 to 1955, has some anti-cancer activity. The E—73 compound, Dr. Rao reported, is much more active than actidione, but it is also much more toxic.

Thus, though it has shown suppressive activity against animal tumors, it is expected to prove too toxic to be useful in human patients. The discovery may, however, provide clues toward an understanding of the nature of the anti-tumor activity.

The John L Smith Memorial for Cancer Research, where Dr. Rao's work was done, is a major research arm of the Pfizer company. The Simth Memorial will expend more than $2 million this year in finding and screening anti-tumor compounds. Somewhat over $1 million of this sum comes from the United States Government through a contract with the Cancer Chemotherapy National Service Center of the U.S. Publict Health Service—the largest such contrac yet awarded—while the balance is contrited by Pfizer.

POWERFUL GROWTH-PROMOTING SUBSTANCE FOUND IN TEST TUBE PLANT TISSUES

Powerful, growth-promoting substances, found in sun-flowers, sweet clover and other backyard vegetation, can make plants grow faster and taller. They can even cause dwarf peas to grow to normal size.

Dr. Louis G. Nickell, a botanist at the Brooklyn phytochemistry laboratory of the Pfizer company, said his studies strongly suggest that this growth-promoting substance or substances are found in many plants and perhaps throughout the whole plant kingdom. His experiments are reported in a recent issue of the journal *Science*.

Unlike synthetic chemicals which are applied to plants to step up their growth, the substances now being studied occur naturally in plants and may play an important role in controlling growth, Dr. Nickell said. However, at the present time, their exact value to agriculture "still remains unanswered," he added.

Until recently, scientists believed that only gibberellin, a chemical product of a mold organism called *Gibberella fujikuroi*, could stimulate growth to the degree observed in Dr. Nickell's Studies. However, Dr. Nickell's experiment suggests that gibberellin-like substances may be quite common to most, if not all, plants.

Gibberellin was first observed by Japanese researchers about 30 years ago when it caused unusual growth in rice shoots. Scientists in the United States have found that it causes increased seed production and faster rates of growth in certain plants and causes many flowers to bloom more quickly.

* *Bulletins is received from Manufacturers*

The plant extracts used in Dr. Nickell's experiments produced the same growth patterns in dwarf peas that gibberellin does: it made the dwarf peas grow into normal-size plants. Because of this, the botanist said there is strong reason to believe some similarity exists in the chemical structure of these two substances.

The substances used in Dr. Nickell's experiment were extracted from tissue cultures of sunflowers, sweet clover, holly, pinto beans, century plants and periwinkle. These extracts were sprayed with an atomizer on dwarf pea plants. After three, five and seven days, these sprayed plants were compared with other dwarf peas—some of which had been sprayed with gibberellin and various other chemicals, and some that had been left untreated.

"Responses of the magnitude shown by the gibberellin standard solutions and by the plant extracts," Dr. Nickell said, "were not obtained with any other solutions of specific chemicals tested. Among the chemicals used were several common auxins (plant hormones), purines, numerous antibiotics, organic acids, amino acids, and various types of chelating agents (metal-binding chemicals)."

Dr. Nickell is conducting further experiments with the plant tissue extracts that produced the greatest growth.

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The third post-graduate course in public-health engineering at the University of Madras began in July 1957 with 15 students. The students of the second course completed their research thesis in December last, thus fulfilling all the requirements preliminary to their qualification. A three-month course for engineers and engineering subordinates has also been conducted. The Government of Madras has decided to give a higher salary grade to graduates in public health engineering as compared with holders of only the B. E. degree. The Central Government is to award stipends for the post-graduate course.

Notes & News

EXPANSION OF MEDICAL EDUCATION

During the second Plan period, expansion of 13 medical colleges was approved by the Government of India upto the end of 1957-58. Of these 10 have received grants and the establishment of 7 new medical colleges had been sanctioned, for all of which grants have been paid.

The medical colleges selected for expansion are those at Madurai, Darbhanga, Mysore, Cuttack, Agra, Guntur, Dibrugarh, Gwalior, Indore, Jaipur Trivandrum, Amritsar and Baroda. New medical colleges which have been started with financial assistance by the Centre are situated at Kanpur, Ranchi, Jamnagar, Bhopal Jabbalpur, Hubli and Kurnool. The total amount of grants made for the expansion of exising colleges and the establishment of new ones during 1957-58 was Rs. 84,64,177. A provision of Rs. 6.5 crores has been included in the second Five Year Plan for this purpose.

The scheme for setting up new colleges is based on the recommendations of a committee set up to advise the Government. It has been decided to fix an expenditure ceiling of Rs. 80,000 non-recurring and Rs. 8,000 recurring per seat in the new colleges to be established, and Rs, 60,000 non-recurring and Rs. 8,000 recurring per seat under the programme of expansion of the existing colleges.

Central assistance of State Governments is at the rate of 75 per cent for non-recurring and 50 per cent for recurring expenditure, subject to the ceilings mentioned, for colleges only, during the Plan period. The entire expenditure on hospitals attached to the colleges will be borne by the State Government.

The total number of medical colleges functioning at present throughout the country is 48.

During the year 1958-59, the upgrading of the Department of History of Medicine in the Medical college at Visakhapatnam. has been approved by the Government of India.

It is proposed to appoint an Upgrading Committee to recommend to Government the upgrading of new departments in medical colleges.

Out of a provision of Rs. 6 lakhs in the budget for 1957–58 for this scheme, a sum of Rs. 4,05,436 was paid to the State Governments as the Government of India's share of assistance.

During 1956-57 and 1957–58, the establishment of 6 departments of social and preventive medicines in medical colleges was approved by the Government of India. Of the Rs. 7 lakhs provided for the scheme during 1957–58, Rs. 1,53,438 was given as grant-in-aid to State Governments for the purpose.

GOVERNMENT ACTION ON REPORT ON FOOD POISONING CASES

The Union Health Minister, Shri D.P. Karmarkar, laid on the Table of the Lok Sabha on August 11, the following statement regarding the action taken by the Government of India on the recommendations of the Commission appointed to enquire into the recent food poisoning cases in the State of Kerala and Madras.

FINDINGS ACCEPTED

The Government of India have accepted the findings recorded by the Commission and conveyed their views as regards legal liability to the Governments of Kerala and Bombay

In the meantime the Kerala Government have registered cases against a number of concerns.

RECOMMENDATIONS

The recommendations of the Commission were examined carefully by the Government of India and it was decided that their implementation should be in two parts, namely, (1) those in regard to which decisions could be taken within a short time and (2) those which would take a comparatively longer time to decide. In pursuance of those decision, those insecticides which are highly toxic to man have been notified as 'Poisons' under the Poisons Act, 1919. The State Government have also been advised to declare these insecticides as 'Poisons' under the relevant State Acts. This declaration of the insecticides as 'Poisons' will enable immediate and effective measures to be taken for their storage, packing, sale and labelling. In addition, these insecticides will also come under the category of 'Dangerous Goods' for the purposes of transport by sea or by rail and will be subject to all the restrictions which are at present applicable under the rule made under the Indian Merchant Shipping Act and the Indian Railways Acts.

In addition, the following concurrent action is also being taken:

(1) The State Governments have been requested to regulate the storage, packing labelling and sale of such insecticides by making suitable rules under the Poisons Act.

(2) Pending standardization of specifications for containers for these insecticides and their formulations, it has been decided that the containers for such insecticides should be the same in quality and kind as those in which such insecticides are being imported.

(3) Safety measures are being strictly enforced in the factories manufacturing, formulating or packing these insecticides and special precautions are being taken in relation to containers, packing, labelling and protective measures for workmen.

(4) Import trade control licences are being issued only to sole agents of manufacturers of such insecticides.

(5) Steps are being taken to educate the users of insecticides though N.E.S Blocks, Gram Sevaks, Gram Panchayats, District

Boards, Extension Officers etc., about the precautions to be taken in the use of such insecticides.

The Government of India appointed a Commission of Enquiry to enquire into the recent food poisoning cases in the States of Kerala and Madras under the Chairmanship of Justice J. C. Shah.

The Commission commenced the enquiry on the 6th June, 1953 and submitted its Report to Government on July 5, 1958.

RECOMMENDATIONS OF LEPROSY ADVISORY COMMITTEE

The Central Leprosy Advisory Committee, which met in New Delhi on August 26, has recommended that the question of enactment of all-India legislation for controlling leprosy should be examined further.

The Committee recommended that while the programme of setting up more subsidiary centres for leprosy control should not be retarded, the standard of existing centres should be raised. A reappraisal of the scheme should also be undertaken in consultation with the State Governments.

TRAINING FACILITIES

Regarding facilities for the training of leprosy doctors and para-medical workers, the consensus of opinion was that the States should be urged to do more in this direction by setting up their own training centres. There should, however, be a central organization to ensure uniformity in the training programme. The Committee recommended that the present facilities for training of social and para-medical workers should be strengthened and a scheme for Central Government aid drawn up. The question of opening all India training centres should be considered further. It also suggested that medical colleges should have refresher courses in leprosy for medical teachers in addition to the existing training centres.

The Committee approved detailed courses for various types of training programmes. It recommended that the possibility of providing funds for institutional treatment of ten cases in a subsidiary centre might be explored. It urged adoption of its earlier proposal to designate leprosy clinics as "skin clinics."

The Committee, which met under the chairmanship of Shri D.P. Karmarkar, Union Minister of Health, was asked to express its opinion as to whether it would be adequate to limit the scope of the legislation to compulsory segregation of leper beggars or to make it more comprehensive. The necessity of new legislation is being urgently felt as the Lepers Act, 1898, and other existing laws have not been of much use in enforcing effective checks on the spread of leprosy.

While 67 subsidiary centres have been set up covering a population of 56 lakhs, and a target of 100 subsidiary centres has been fixed under the Second Five Year Plan, so far 34 centres have been established under the Second Plan. During the current financial year, 27 centres for which sanctions for allotment have been issued, will be started shortly. The numbers of centres sanctioned in the First Five Year Plan was 40 pilot projects (four treatment and study centres and 36 subsidiary centres), of which 33 were opened.

CONTROL OF LEPROSY

Replying to a question in the Rajya Sabha on August 21, Shri D.P. Karmarkar, Minister of Health, said that three out of the 30 additional subsidiary centres proposed to be established during 1958-59 had so far been set up under the scheme for the control of leprosy.

T. B. CONTROL PROGRAMME

In a statement laid on the Table of the Lok Sabha on August 25 in a written reply to a question, Shri D.P. Karmarkar stated that the preliminary report of a survey made up to June 1956 by the Indian Council of Medical Research revealed that tuberculosis was prevalent in villages, small towns and cities and that 2 per cent of the people in areas covered by the report were affected by the disease.

The survey was conducted by the Council in cities, small towns and villages in six zones, namely, Hyderabad, Calcutta. Delhi, Madanapalle, Trivandrum and Patna.

The tentative findings of the survey were:

(1) The morbidity of T. B. varies from 7 to 30 per thousand persons in different areas.

(2) The prevalence of T. B. in villages, small towns and cities is not as marked as originally expected.

(3) The morbidity rates are lower for females than for males.

(4) The prevalence of T.B. among persons of the age group or 45 years and above is considerably higher than for the age group 5 to 34 years: and

(5) Bacteriologically positive cases vary from 1 to 11 per thousand persons in different areas.

The Government of India have formulated a National T.B. Control Programme comprising the following schemes :

(i) Central subsidy for intensification of the B. C. G. vaccination campaign;

(ii) establishment/upgrading of 300 T. B. clinics to provide or expand facilities for diagnosis and domiciliary treatment;

(iii) establishment of 15 T. B. demonstration and training centres;

(iv) establishment of 4,000 T.B. isolation beds, and

(v) establishment of eight after-care and rehabilitation centres for T.B. patients.

AFTER-CARE CENTRES FOR T.B. PATIENTS

Replying to a question in the Lok Sabha on August 25, Shri D. P. Karmarkar stated that proposals for the establishment of after-care and rehabilitation centres for T.B. patients had been received from some State Governments.

He added that proposals for the establishment of such centres for T.B. patients in Delhi, Lucknow, Dhubulia (West Bengal), Poona, Amargadh (Bombay), Hyderabad and Mysore and for expansion of the existing centre at Madras had been approved.

MALARIA CONTROL PROGRAMME

It reply to a question in the Lok Sabha on August 28, the Minister of Health, said that anti-relapse thereapy measure under the Malaria Control Programme were expected to be introduced in the States in 1959. He added that there would be alterations in the programme due to the change over from malaria eradication. Anti-malarial drugs would be distributed free to all participating States as and when the anti-relapse therapy measurss were introduced

U. S. AID FOR MALARIA CONTROL PROGRAMME

An agreement was signed between the Government of India and the U.S. Technical Co-operation Mission in New Delhi on August 29 according to which a sum of Rs. 2.1 crores ($4,400,000) has been made available to India for the malaria eradication programme. The money will be used for the purchase of approximately 7,100 long tons of DDT to help meet the requirements of the 1959 spraying season.

During the U.S. fiscal year which ended on June 30, the U.S. Government provided $ 12 million to enable India to broaden the malaria control programme to one of eradication. Since the beginning of the Indo-Amercian programme in 1952, the U.S. Government has granted about $ 44.1 million for the control and eradication programmes.

STEPS TO CHECK SPREAD OF CANCER

Shri D.P. Karmarkar, Minister of Health, said in reply to a question in the Rajya Sabha on August 27 that there were 40 hospitals in the country with the latest equipment for the treatment of cancer.

He laid a statement on the Table of the Rajya Sabha out lining the steps taken by the Government of checking the spread of of cancer. The steps were :

(1) Establishment of the Indian Cancer Research Centre in Bombay in 1952 for post-graduate teaching and research in cancer and allied subjects in collaboration with the Tata Memorial Hospital, Bombay, which was taken over by the Government of India on April 1, 1957.

(2) There is a plan provision of Rs. 35 lakhs to encourage research in cancer in the Second Plan. Under this scheme, the Government of India have taken over the Chittaranjan National Cancer Research Centre, Calcutta, with effect from April 1, 1957.

(3) Grants-in-aid have been made to the following institutions treating cancer: the Kamla Nehru Hospital, Allahabad; the Chittaranjan Cancer Centre, Calcutta; the Radium Institute, Hyderabad; the Cancer Institute, Madras and the Orissa T.B. and Cancer Hospital, Chandpur.

(4) The Government of India have arranged for three Cobalt Bomb Therapy Units under the Colombo Plan for supply to the Tata Memorial Hospital, Bombay, the Chittaranjan National Cancer Research Centre, Calcutta, and the Christian Medical College, Ludhiana. It is understood that two more units will be made available from Canada under the Colombo Plan.

CANADIAN AID FOR CANCER TREATMENT

Replying to a question in the Rajya Sabha on August 21, Shri D.P. Karmarkar said that the Government of India had received intimation from the Canadian High Commission that the Colombo Plan authorities in Canada had allocated an amount of $1,20,000 for the supply of three cobalt bomb therapy units to India for the treatment of cancer. With this allocation only three units would be supplied. These three units, when received, were proposed to be installed at (i) Tata Memorial Hospital, Bombay, (ii) Chittaranjan National Cancer Research Centre, Calcutta, and (iii) Christian Medical College, Ludhiana.

VENEREAL DISEASE CONTROL SCHEME

In a written reply to a question in the Lok Sabha on August 28, the Minister of of Health said that from surveys conducted in recent years, it appeared that the incidence of syphilis was high in the sub-Himalayan tracts extending from Kashmir in the west to Assam in the east.

A National Venereal Diseases Control Scheme had been included in the Second Five Year Plan. The Scheme envisaged both curative and preventive measures. It also included an educational programme. Under this scheme clinics had been opened in Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Madras and Uttar Pradesh, covering both the preventive and curative aspects.

TRAINING OF DAIS

The Union Ministry of Health sanctioned grants totalling Rs. 37,500 during June to Orissa and Manipur for the training of *dais*. Of this amount, Orissa will get Rs. 27,500 Manipur Rs. 10,000

For the training of auxiliary nurse-midwives, a total of Rs. 57,000 was sanctioned to four institutions in Sholapur, Silchar, Kanpur and Sagar, respectively.

TRAINING OF AUXILIARY NURSE-MIDWIVES & DAIS

The Union Ministry of Health has sanctioned a sum of Rs. 7,000 as the first instalment of the Government of India's contribution for the training of 10 auxiliary nurse-midwives at the Maternity Home, Sagar, under the Community Development Programme, for a period of two years.

Sanction has also been given by the Ministry for the continuance during 1958–59 of the scheme for training of auxiliary nurse-midwives at the Civil Hospital, Imphal, under the Community Development Programme.

The continuance during 1958–59 of the scheme for the training of dais in Manipur at an expenditure of Rs. 10,000 has also been approved by the Ministry.

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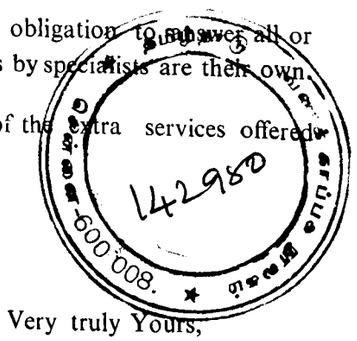

Very truly Yours,

DR. B. RAMA RAU, B.Sc., M.B.B.S.
Editor

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