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The Madras Medical College Magazine

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Publisher :

ULLOOR
P. KRISHNA MOORTHY.



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Vol. XIX.

OCTOBER 1950.

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Where the mind is without fear, and
the head is held high ;
Where knowledge is free ;
Where the world has not been broken
up into fragments by narrow domestic
walls ;
Where words come out from the
depth of truth ;
Where tireless striving stretches its
arms towards perfection !
Where the clear stream of reason has
not lost its way into the dreary desert
sand of dead habit ;
Where the mind is led forward by
Thee into ever - widening thought and
action—
Into that heaven of freedom, my
Father, let my country awake.

—TAGORE.

★ Our cover page depicting Mercury taking flight, is a reproduction of Giovanni Da Bologna's world famous masterpiece, in bronze.



(1811-1870)

Anaesthesia in Surgery

Progress in modern surgery owes much to the improvement in anaesthetic methods. Sir James Young Simpson was the first man to use chloroform and thus laid the foundation of modern anaesthesia.

Notable contributions to modern anaesthesia are to be found in the compounds evolved in the Research Laboratories of Imperial Chemical Industries. The medical student of today, who is the doctor of tomorrow, may well look to I.C.I. for further progress in this field. Recent contributions by I.C.I. to anaesthetic progress are:

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Editorial

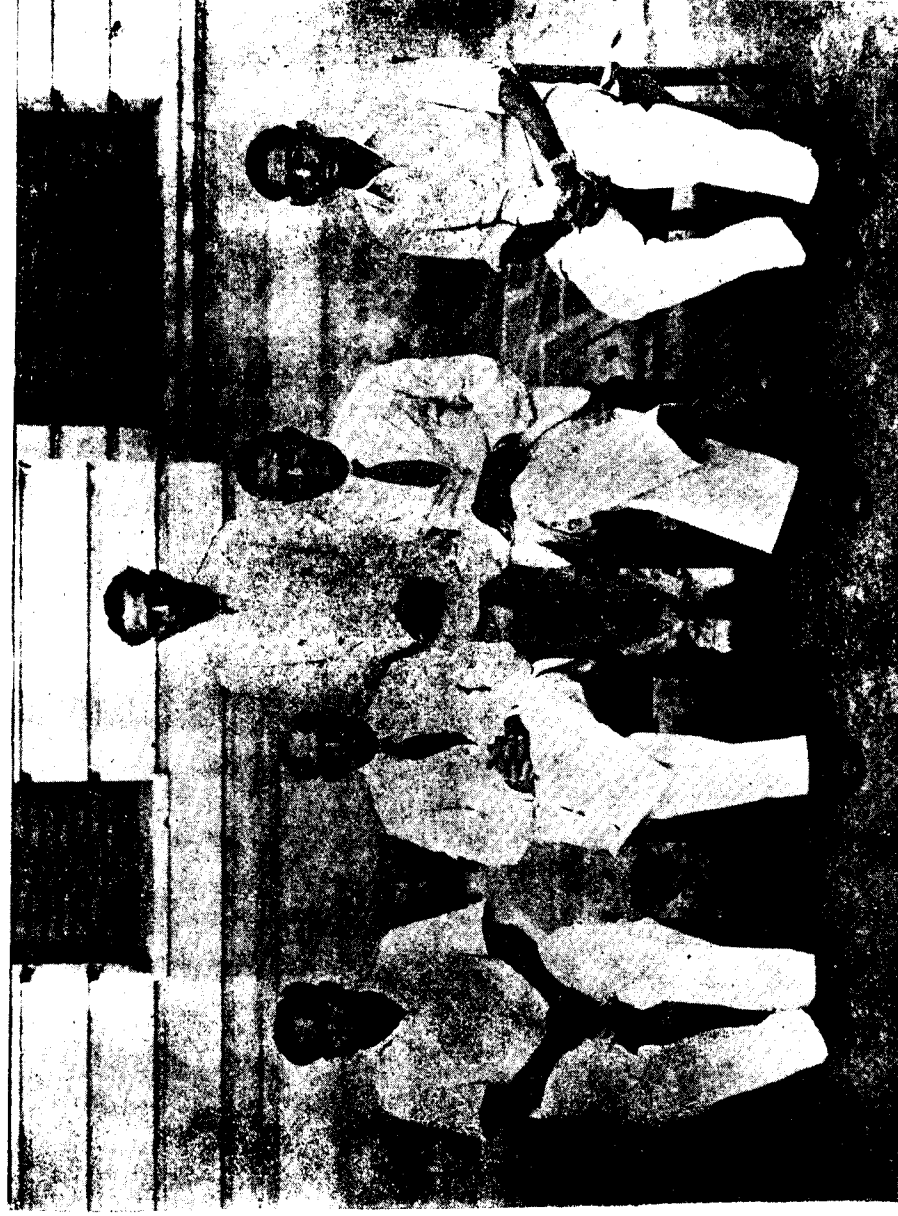
WE are now in the middle of this century—this century of progress, of culture and of advancement, where the processes of construction are going side by side with the devastations of destruction. We are in an age of research where we strive hard to probe into the mysteries of nature, the enigmas of the human body and mind, and the dark and dangerous secrets of the atom. In this long struggle between Man and Nature, where infinitesimal Man fights against infinite Nature, in this long struggle, begun since the beginning of Man, we have achieved much and we have lost much. And still Nature with her ever-changing emotions, allowing us to play on her lap and disillusion ourselves that we are masters and take pride in our conquest, with the building hand of engineers and the healing touch of doctors, smiles with aloofness and disdain as Mona Lisa at the Louvre.

Here too, in the sanctum sanctorum of medical education in our country, there are changes, constructive, strategic and novel—a new Hygiene block is to be built, for preventive medicine is slowly ascending the ladder of importance; our canteen has changed its place motivated by the idea of novelty and more so by a sense of strategy; our college office has come down and here the reason is our thirst for experimenting. But I must humbly apologise that even in this dynamic, everchanging age, I have remained static and have not brought any notable change in the appearance of our magazine nor in the monotony of its contents. I take solace in the thought that there are some who want no change even in this restless world of ours—for do we not at times sit in a trance, when time stops and the present perpetuates into unending eternity?

I must end. In Rome a crown of Laurels used to adorn the victor's head, but I am humble—I share with those that made this possible.

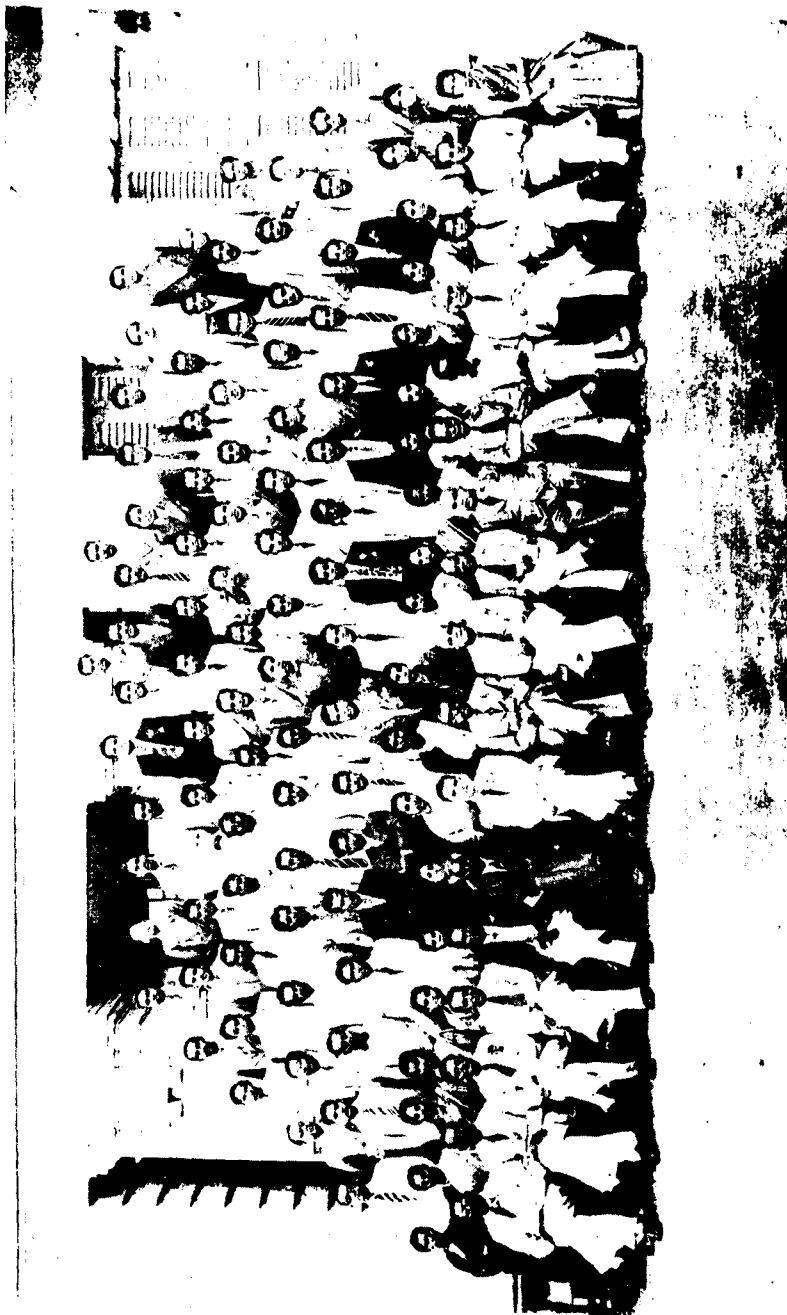
P. K. Ramaswami.

THE MAGAZINE COMMITTEE 1950 - '51.



Sitting :—(L. to R.) Ulloor P. Krishnamoorthy (*Publisher*). Dr. D. S. Iyer (*Vice-President*).
 Dr. R. V. Rajam (*President*). P. K. Ramaswami (*General-Editor*).
Standing :— R. Haneef (*Associate-Editor*).

THE GRADUATES OF THE YEAR—1949-'50.



Placebos in Therapy

Dr. V. ISWARIAH, B.A., M.B., M.R.C.P.,

Prof. of Pharmacology.

CLINICIANS who assemble here weekly have often to digest a mass of factual details, the course of the thoracic duct, the source of ascitic fluids, the lesions of the spinal tract, the reasons for haematuria, the seasonal prevalence of poliomyelites, the drugs that bind the intestine, the bugs that turn them to water, that well nigh their heads will be bloody with the bludgeoning of much learning. You will therefore forgive me if my only object is not to rummage the depths of "Clinical minds" but to scrape the surface of grey matter for recreative stimulation.

The word 'Placebo' is of Latin origin with an ecclesiastical and medical significance. Ecclesiastically it refers to the introductory response to vespers for the dead. In medicine 'Placebo' or 'I shall please' has come to signify a drug having no real curative power other than psychological.

Placebos date back to beyond Hippocrates and they were known as such. The Pharos of Egypt were treated by rare medicinal agents like bile of crocodile from the Nile, milk of tiger, fat of viper, horn of unicorn, gallstones of wild boar—the rarity of these agents subserving the placebo element. The enormous success of Homeopathy in the 18th century where drugs were given in great dilution that they could not possibly have exerted any pharmacological action is another example of placebo.

But why go to history? Does not every prescription carry with it the placebo element? A prayer to Jupiter (Superscription or superstition) starts the prescription, it is signed by a doctor on an elegant letterhead,

* Read at a clinical meeting.

the prescription has to be taken to a drugstore to be made up, that the patient has to pay for it, that it has perhaps a bad taste— are not all these placebo elements in the treatment? "The patient has to pay for it" those words remind me of an experience not so long ago in Bihar. I was the guest of a leading medical practitioner in Patna, when I noticed a number of patients, all villagers belonging to the agricultural class waiting for treatment. I asked a junior doctor about the place, if these poor patients could afford to pay the doctor for treatment. The young doctor gave a most cynical cum sarcastic smile and replied, "Poor? they look poor" what is more, they are not satisfied until they pay you twice what you want: for, the more they pay or subject themselves to sacrifice, the more efficient is the treatment. That is their idea". There one sees a new Indian element of placebo—(how one wishes it was so in S. India)—an element that contributes to treatment apart from pharmacotherapy.

Varieties of Placebo:—Placebos have been classified into two main groups.

The first or the true placebo is, the lactose tablet, bread pill more effective if coloured or mottled, a bottle of mistura caramel more efficient if with a riot of taste. The pure placebo relieves the patient or tranquilises the recipient; the doctor intends this. It may be styled psychotherapy, but practised by a general practitioner with the aid of an innocuous chemical, as skilled psychotherapy by a psychiatrist is expensive or unavailable. The lower the degree of the patient's intelligence, the more often he may be benefited by it; but this is not absolute. Here again the cheaper innocuous therapeutic agent may suffice for some, while a more costly none the less innocuous medicament may be needed as in the case from Bihar referred above. The giving of a bottle of medicine or a pill or better still an injection today, is a symbol for the statement "I will take care of you" and this has the therapeutic effect. A whole body of knowledge wisdom and experience is epitomised in the little pill or the bottle of medicine. Again the pill or the mixture helps to fulfill the patient's need to feel dependent. He wants to feel supported, else he gets disturbed. A bitter or nauseating medicament fills a need for punishment which many feel they need at some time or other. The riot of smells and tastes in a mixture is very effective in creating illusions of an efficacious medicine as valerian and asafoetida in hysteria. Valerian by the way enjoys a further advantage. Its utility is not likely to be disturbed by information which the patient may obtain from the dispenser. If the Pharmacist or dispenser looks up its action in his favourite source of information, say any old *Materia Medica* text book, he is sure to find a very long list of conditions for which it is recommended

without a vestige of reality. Ofcourse no one denies that when a genuine therapeutic agent is used, the element of suggestion is also there; the element of optimism that the physician conveys to patient is there to reinforce the specific action of a drug. Here one has to remember the old observation of Jonathan Swift that no patient will ever care to be handled or treated by a personality for whom he has no respect and veneration, even if he happens to be an eminent doctor (2) The second or the false placebo or adulterated placebo or bastard placebo is a different group. If, in the true placebo the doctor plays a pardonable deception or hoax on the patient, with the intent of pleasing him, tranquilising him and thereby relieving his symptoms, in the latter or the false placebo, the doctor wants to give something that he thinks will help the patient and in so doing relieves his own symptoms, tranquilises his own self, applies the balm of flattering unction to his own soul, in other words practises deception on himself. If deception is involved in the case of pure placebo, only one person is involved, i.e., the patient. But when one uses an agent of questionable pharmacological activity or in amounts that can by no possibility exercise pharmacological action, there is the real danger of deceiving two people—the patient and the physician. The doctor comes to think that the agent has potency when in fact it has none. To this category belong many hormonal products, vitamins, calcium, iron and such other therapy involved in curing grey hair, baldness, impotency etc. The doctor tells the patient with more conviction that the patient is going to be helped by a particular drug, but it deceives the doctor despite the patient improving in general condition.

The extent of this type of placebo action has only been recently appreciated. In reviews of New York Hospital Pharmacopoeia every 25 years since 1816, amongst a list of 160 drugs every subsequent review recommended deletion of one third of the existing list, not because better substitutes were available but the old ones were considered inert. This means that all these cases treated with those discarded were cured not by Pharmacology but by Placebo. (Who knows the fate of B. P. 1948 in A. D. 2000?).

Again the extent of placebo action has been appreciated by controlled study of new drugs. Till a few years ago, we thought we were making a big advance in rational treatment when we began to study a drug by comparing say a 100 cases treated with this drug with a 100 cases not treated at all. We now realise that we have to assess a new drug by comparing it with a group not treated with any drug and a group treated with a placebo. Dr. Wolff, Associate Professor of Medicine and Psychiatry, Cornell University Medical College, found in his study that

sucrose tablets and some innocuous hypodermic injections had about the same effect in preventing sea sickness as barbiturates and hyoscine. Seidel and Abraham found that hypodermic injections of saline were just as effective as vaccines in rheumatoid arthritis.

Frantic claims were made not so long ago for antihistamine drugs in common colds. Controlled study with placebos revealed that cases treated with many of the antihistamine drugs were no better than the controls in the incidence, severity, symptoms or duration of colds.

Physicians of the early days who indulged in 'Polypharmacy' or lengthy prescriptions were and perhaps are actuated by a belief that many medications are on the borderline between pharmacology and placebo; there is always the chance of hitting on some effective remedy in a jumble. This is the attitude that the Pharmacologist is against, the result, deceiving the doctor as to the action of a medicament. Had they controlled their study with pure or unequivocal placebos they are most likely to be enlightened.

The development of rational therapeutics will continue to lag in our country as long as we encourage the use of preparations which contain some potent agents but which have played a large part in deceiving physicians into believing that the results are due to the medicament. To validate a pure placebo by a useless amount of some potent material—iron or calcium or vitamin or hormone—is a substandard practice or hyposcientific procedure. The path of therapeutic advance is strewn with the bones and the bottles of those who failed to make a controlled study of medicaments.

It must however be repeated that the personality of the doctor is of vital importance and when a person believes in a drug he is given, the results are much more far-reaching. Conversely, the doctor who has best results with a set of drugs in which he highly believes is the one who is least fitted to evaluate results critically.

Apparatus, Injections and X-rays as placebos:—Mass, not to speak of class has sufficiently progressed in civilisation as to want "ingestion" in preference to oral medicament. Every house surgeon on night duty should have had the experience of injecting $\frac{1}{2}$ c.c. of distilled water to tranquilise the patient who had a taste of morphine. To such a kind of patient, a specific kind of treatment is a conditioned reflex. Dogs that are given morphine frequently in rather large doses, says Dr. Wolff, will vomit following the injections. If this is done regularly for two or three weeks and then sterile saline substituted for morphine the dogs will also

vomit following the sterile saline injection. The needle and the injection without any morphine are sufficiently potent symbols to set off the physiologic response to morphine. To how many therefore, a needle prick is an effective placebo or "I will take care of you"? Nay the class rather than the mass would respond better if any medicament, potent or otherwise has been administered after a skiagram. Lay dabblers of medicine who exemplify the old saying 'Little knowledge is dangerous' have great faith in biochemical tests—four hour stay in the precincts of a hospital, repeated blood taking, preferably simultaneously a urine test, blood pressure apparatus to cause cramps, an elegant typed report and a decent bill—these then are the symbol of 'I will take care of you' or the placebo element in treatment.

Dr. Lipkin of Cornell College describes a series of cases of Raynaud's syndrome treated with mecholyl iontophoresis. In a control series, saline was applied instead of mecholyl and what is worse, did not turn on the current but simply clicked the dial. Sometimes 2 milliamperes of current were used. Some improvement was noticed in every case of control and in 6 out of 25 cases results were excellent. In one case the patient was so treated three times a week without the doctor's knowledge by a nurse for about one year with satisfactory results. Previously this patient had been unable to go out in the cold weather without suffering spasm, unless she used fur-lined glove and carried a muff. Another patient was unable to work for the first hour after she reached office as the touching of the typewriter key would throw her finger into spasm. She was given saline iontophoresis once a week and a saline I. M. injection twice a week, she improved remarkably.

Surgical placebos:—Let not my surgical and other 'non-medical' colleagues run away with the composing thought that placebo is the realm of physicians. How many tonsils, appendices, gallbladders and healthy teeth have been sacrificed to provide the placebo treatment? It is said that in America as perhaps in most western countries, a category of women of the leisured class, who carry in their handbags not only cosmetics or beautifying apparatus but also results of several laboratory tests, who with a relish and a gusto talk of their ailment and who in the words of Hanna More are fond of the company of Physicians, as they are the only persons with whom one dared to talk continuously of ones self without interruption, contradiction or censure, are the type that court surgical placebos. Each partial evisceration tranquilise them for a brief period till they allow themselves to be practically eviscerated by some one or more surgeons.

How many elderly spinsters have been frightened to surrender their infructuous uterus on the slightest symptom of menopause, because the

patient knew too much about cancer uterus? The operation is a placebo that cured, but certainly a costly and needless one.

Prof. Dunlop, my esteemed teacher in Edinburgh observed in a talk to post-graduates "I am sometimes a little alarmed that in scientific, highly specialised units of teaching hospitals, the patient as a whole man, a sensitive man, is often forgotten. So often no one takes the trouble or has the time to tell him or her in simple terms what is the matter with him or her, what people are trying to do which gives so much comfort and therefore such an important therapeutic factor. There he is allowed to lie, frightened, mystified, worried, while his case is discussed in impersonal terms as though he was really an internal combustion engine with a leaking valve. I have known women of the 'Hospital class' for instance who have allowed themselves to be practically eviscerated by some surgeon without the slightest idea what organs have been removed or the reason for their removal. There is no need to convert our patients into the type more commonly found in America who *prate ad nauseum* of their blood ureas, B.M.R's, cardiograms, Kahn's etc.; but there is a happy medium and in this country, I think we err on the side of Balaclava attitude "Theirs' not to reason why, theirs' but to do and die".

Placebos and changing concepts in medicine: As with changes in fashions in dress—long coat yielding place to short vest giving place to bush coat and then to black sherwani—so in medicine we are victims of changing concepts—focal sepsis, intestinal autointoxication, allergy, avitaminosis and today possibly adaptation syndrome or alarm reaction. We had diets for hypertension, for Bright's disease, ketogenic diet for urinary infections, Karell's milk and salt-free diet for (?), step ladder diet of alarming complexity for diabetes; we had diet for heart disease, Gerson diet for T. B.; diets for asthma, bewildering number of diets for peptic ulcer like Lenhartz, Sippy, Hurst's modification, Meulengracht diet and Witt's modification of it, the pulped apple diet, Sprigg's lactovegetarian diet and today Kempner's rice diet for hyperpiesia. Some of these were not merely unpleasant to the patient but sometimes positively detrimental as in Sippy diet that invariably ended in scurvy and anaemias. How about the post-operative gastro-enterostomy diets of about two decades ago? Any good derived out of these pandemonium should today be traced to placebo.

What a heavy toll did focal sepsis receive? Langdon Brown recalls an incident of his colleague Prof. Leycock. Says he "he an eminent physician when on a ward round drew the attention of the students to a patient's teeth pointing out to them that such teeth indicated that the patient was of what was then called "Rheumatoid diathesis". Thereupon

the patient much to the amusement of the class took out his dentures, dentures were seldom worn by hospital patients in those days, and handed to the professor asking him if he would like to look at them near at hand."

It was providential that the dentists in our country are few and far between; had they joined hands to exploit the situation, the vegetable seller alone stood to benefit as most denture-wearers turn vegetarians. Diabetics and suspected peptic ulcer patients are the more common victims to dental Sepsis.

Tonsils, gall bladder and appendix came in this group while for some time the colon was deemed the nigger in the woodpile of health.

And how about allergy? Even today any undiagnosed disease makes the medical hunter go in quest of the allergen in the woods. Are not many desensitising mechanism or avoidance of so called allergen and pathogens mere placebos? Story is told of the asthmatic Edinburgh businessman who had only two nights of freedom each month from his affliction when he journeyed up to and from London for his monthly meetings. In the train he slept like a child. It occurred to the Physician in attendance, that the pillows in the sleeping car were stuffed with some composite material and not feathers and that he might be allergic to feathers as his skin test was strongly suggestive. And so every pillow and cushion in his house was ripped open, the feathers removed and the composite material installed. But the asthma was as bad as ever. The Physician had not then realised that there was that in his nuptial couch but not in his sleeping berth to which he was far more allergic than to feathers. (If we stick to the allergy concept, the wife was the allergen). The facile method of giving a few injections for the so-called desensitisation is a myth, a mere concession to the psyche rather than a serious tribute to the soma. Thanks to the antihistamine drugs, though symptomatic, they have to a large extent weaned the medical frame from delusion of detection of allergen and claim to cure causatively.

Lately much doubt has been raised in the minds of Pharmacologists, if the so-called expectorants—Ipecac, Squill, Iodide, Ammoni carb—work by faith or by pharmacology. Ammonium chloride is sometimes prescribed in cough mixtures in 5 gr. doses; but when given in 30 gr. doses to make the urine acid, do we ever see patients spending their time in coughing up sputum? Potassium iodide is undoubtedly excreted by the salivary, bronchial, lachrymal and nasal glands. There is no reason to believe however that they will run at their bronchi alone when we wish it and not at the nose and eyes, and if they do, we call it iodism. Short of iodism,

it is very doubtful if potassium iodide has an expectorant action. When we administer atropine or belladonna, we do so hoping that it will have its action just where we want to act; if it is to reduce bronchial secretion we think it won't affect other secretions or the eye; if it is to be given in fairly large doses to reduce spasm, we expect no other action but just antispasmodic effect. Pharmacologists have been teaching that emetics in subemetic doses cause expectorant effect. Some recent experiments seem to suggest that emetics in super emetic doses alone have expectorant action. If that is established, have not all the expectorants exerted a placebo action and not a pharmacological action?

Intelligence and Suggestion in Placebo therapy: It is some times assumed that the element of suggestion as applied to placebo therapy is present in lower degree of intelligence. Often there is not much relationship between the state of intelligence and the responsiveness to a placebo. The mechanism of suggestion is more associated with emotion, emotion and intelligence need not necessarily run parallel. One may find an intellectual modern brand being highly emotional while a rustic villager is cool and phlegmatic, irresponsive to any suggestion. More often one comes across a highly sceptical patient in whom even genuine therapeutic agents don't work. Those of us who had to treat another medical man should have encountered difficulties in the use of some drugs which give no trouble in the case of non-medical patients. Harry Gold observed with reference to this aspect "I have made it a rule to distrust so called intelligent people, who are eager to be informed about the details of treatment on the grounds that they are intelligent and can be depended upon to co-operate better, with a complete understanding. I need only to be perfectly frank with one of the patients and tell him for example that we need to guard against digitalis toxicity, that toxicity makes its appearance with a loss of appetite, spots before the eyes, vomiting or premature contractions, when I am promptly confronted by all these symptoms long before, enough of the drug has been taken. I am likely to tell these "Intelligent" patients much less than the so called "Unintelligent". The case of a distinguished New York Physician always sticks to my mind. I noticed him breathing very heavily when he walked upstairs and when asked replied that for many years he had heart failure with auricular fibrillation and showed me his legs that were almost twice their normal size. He carried a bottle of Tr. Digitalis in his back pocket and took a few drops now and then. When I asked him why he did not take more and that regularly he said that he was very sensitive to digitalis. He had also become somewhat addicted to heroin by its continued use, to control his attacks of nocturnal dyspnoea and cough. Here was a very intelligent scientist in advanced heart failure virtually without treatment with the only drug that could possibly put him in order. On the condition that he was not to ask me what was

given, I undertook to manage him. I made up a bottle of medicine containing a teaspoonful of Tr. Digitalis in a tablespoonful of Tr. Valerian. The taste as well as the large quantity per dose threw him off the track completely. He took a daily dose containing a dram of Tr. Digitalis. During the first few days he carried on almost without a moment of sleep, because he was too busy passing urine. He lost about 40 pounds weight. All symptoms of failure subsided. When he knew that he was receiving a few drops of digitalis, it made him so sick to his stomach, but when he was kept in the dark, he took a teaspoonful. Hence the efficacy of a placebo bears little relation to the intelligence of the patient".

It goes without saying therefore that the selection of patients for placebo therapy is as important as the selection of patients for any other form of therapy. The placebo should rarely if ever take the place of long range therapeutic management.

Some may ask, if in an ideal community, educated public, abundant doctors with adequate time and energy and wherewithal whether it would still be a good idea to use this form of therapeutic device or placebo? Is it the best device if the doctor-patient relationship is of the optimum or ideal kind? One is inclined to answer that when it has lived from the time of Pharos till the America of today, placebo or chemical device for psychotherapy will remain for all time.

Conclusion :—It was said of Fredrick Taylor that at the end of his life, he was so conscious of the possibility of error that he never ventured to make a diagnosis. As we grow older, we come to realise that all knowledge is provisional.

Controls with drugs reveal wide ramification of the element of placebo in drugs or even non-drug therapy. Actions and results once attributed to many are not there, instead something new and perhaps pleasant. Havelock Ellis reiterates in his writings how he was like Saul the son of Kish who went out to seek his father's missing asses but found a kingdom. He had searched and searched for truth but had not found it. But he found beauty instead. When you search for truth, you often encounter beauty and stop to say this is also truth.

—★—

Our material life, all that we see, and hear, and touch, and use, has issued from pensive minds, and brooding hearts All the magnificence, all the power, all the innumerable commonplace blessings which we enjoy daily without thinking, were born in the silent thoughts of single lives.

—James A. Mackereth.

★ Some of the methods suggested to have a cheap balanced South Indian diet, utilising to the maximum, the materials available in South India

Cereal Shortage

Dr. T. R. RANGASWAMY, M.B.B.S., B.S.Sc.
Professor of Hygiene, Madras Medical College

THE question of keeping the population adequately fed is one of the essential tests of efficiency and utility of the agricultural policy of the country. Health Authorities have to lay down standards of essentials of the diet needed to keep individuals fit and it should be the aim of the agriculturists to produce, and the administration to distribute it equitably. All the nations of the world attach great importance to the live capital i.e., the safety and well-being of their populations.

'To preach health to the underfed is a hypocrisy' is realised by the political and planning report of England (*vide*: Health of England - Penguin Book) and considering this only, England during war time, arranged to provide for its population 2800 calories per head, per day, though England cannot maintain more than 30 to 40 percent of the population on the produce of the land available in England. So, in addition to trying to get imports, attempts at self-sufficiency will have to be done so far as Madras is concerned.

The present cereal ration of 12 ounces will give about 1200 calories. The poor people cannot afford costly material and can purchase only cereal, dhal, and vegetable oils and milk powder; hence, the necessity for evolving a diet which is cheap, balanced, and capable of tiding over the present difficulties and deficiencies.

In Madras Presidency, tobacco is not rationed though essential food-stuffs are rationed. 267,800 to 275,000 acres are under tobacco cultivation, though people cry for more food (as per figures available in 1945; present figures can be ascertained from the Agricultural Department). The question of control of fresh planting of tobacco allowing the existing crops to be harvested and until food situation improves needs earnest consideration by the public.

Prohibition in relation to feeding of the public :—

- (a) Fresh cocoanuts form a good addition to dietary in areas where cocoanut is grown.
- (b) Date palm jaggery will come in handy to make up the calorific value in the diet.
- (c) Palmyra palm jaggery needs to be encouraged if necessary by giving a bounty for every maund of palmyra sugar produced.
- (d) Jaggery and molasses can be used for rendering ground-nut palatable and harmless.
- (e) For medical purposes, Ippa or Iluppai and Moa flowers alone to be allowed to be used for distillation of alcohol.
- (f) Import of sugar molasses, jaggery and Gur and skimmed milk powder upto requirements, has to be done if the calorific requirements are to be rapidly met.

With a view to provide fodder for milch cattle and thus increase production of milk cattle, in agricultural areas and forests, use of silage has to be extended.

Till situation improves, ground-nut and its products will have to be used on a large scale and for this additional sugar or sugar candy has to be provided. It has been shown in para 2, how prohibition will help to provide this.

Vegetables :—To give bulk and to supply minerals and vitamins, fresh vegetables preferably of the green leafy variety are needed and public educated to grow as much as possible in their own lands, on river beds or on the banks of rivers.

Protective food :—

(1) *Milk and milk products :—*At present, the average production and consumption of milk in south India is only 3.5 oz. for each person in a day, though health authorities recommend 8 oz. intake per individual per day.

(2) *Food yeast :—*Production plant of Agricultural College, Coimbatore, needs to be extended and all ex-breweries can be converted into food yeast factories.

(3) *Vitamin C* :--Gooseberry tablets may be made and distributed. During the war, this was a cheap, efficient and easy method of providing Vitamin-C to troops in East Africa, Egypt, and the Middle East. There seems to be no reason why this should not be revived now.

The following dietary is suggested under the present circumstances :-

Name of Food Material	Oz.	Ration I Calories Approximate	Oz.	Ration II Calories Approximate
Rice or Wheat or Ragi or any other cereal	12	1180	12	1180
Ground-nut	5	835	3	508
Dhals, Gram, Black-gram or Green-gram or Bengal-gram	2	184	2	184
Oil	$\frac{1}{2}$	128	1	256
Vegetables—Leafy	6	54	4	36
Non-leafy vegetables	6	54	2	18
Tubers	—	—	4	141
Milk or Milk products	$3\frac{1}{2}$	63	8	152
Fruits	—	—	2	58
Tapioca or sweet potato	—	—	2	90
Jaggery or Gur or Sugar	$3\frac{1}{4}$	354	$2\frac{1}{4}$	218
		2852		2841

When fish is available instead of two ounces of dhal, seven ounces of fish is recommended.

Deducting 10% for wastage in transit, storage and cooking, the net calorific value will be round about...

2567 2557

Food Yeast, Gooseberry tablets and Shark Liver Oil to be added to the above rations as required.

Attempts to be made to increase production and consumption of milk, up to 8 oz. by encouraging the public to keep the poor man's cow i.e., goat. To increase animal protein, consumption, poultry farming and

sheep rearing and fish culture are suggested as hobby for school children, college students and the public. Incidentally, though these provide animal protein, they do not compete with human beings for their food supply requirements and they draw their nourishment from waste product of agricultural and domestic waste like weeds, grass, kitchen waste etc

To increase the carbohydrate portion of the food of the province, in every garden, in addition to growing of vegetables, easily reared plants like Tapioca, Indian Corn, Sweet Potatoe, Yams, have to be encouraged.

It is preferable to encourage consumption of Shark Liver Oil also upto at least one tea spoon a day. Fortunately, the Government Shark Liver Oil Department is able to comply with all indents made on them.

Man's work is his soul.

—Ibsen.

Great discoveries belong not so much to individuals as to humanity; they are less inspirations of genius than births of eras.

—E. L. Youmans.

Life in the midst of danger is the life, the real life, the life of sacrifice, of example, of fruitfulness.

—Pasteur.

★ 'Let him first examine the family of the intended bride, those who are on the father's side and on the mother's side. Let him marry a girl who shows the characteristics of intelligence, beauty and virtue and who is free from disease.'

—GRIHYA SUTRA.

Choose your Partner Carefully

V. SRINIVASAN, M.Sc.,
IV Year.

THE first thing that will attract the attention of any careful observer of the students, who are entering the various colleges in the City, is the diminutive size of the majority of them. Their looks also belie their age; though they claim themselves to be eighteen or nineteen, they look fourteen. The most prominent feature about them is the pair of thick glasses perching on their tiny noses. It is really a pathetic sight to see them going to the college bending under the weight of the books they carry. When we compare them with the students of the intermediate classes about ten years ago, the difference is shockingly obvious. There is a definite degeneration in the stature. Even with reference to their I. Q. (Intelligence quotient) one cannot say that it has improved much; on the other hand it is generally considered to be deteriorating steadily. Unless this degeneration is promptly checked, the human race in South India may soon find itself highly handicapped in the struggle for the "survival of the fittest".

The causes for this degeneration may be various. Economic condition will be the first accused according to many, who see things only at surface; but personally I will accuse the ignorance of our people of the "Science of being well-born", that is the ignorance of *Eugenics*, as the foremost culprit. According to Sir Francis Galton eugenics "may improve or impair the racial qualities of future generations, either physically or mentally". The methods of improvement of different stocks of animals and plants, by studied matching have been studied thoroughly by geneticists and today we can have any particular breed of animal or strain of plant, developed with reference to a particular character that we want. Then why not we human beings also make use of the

knowledge gained from experimental genetics? The answer is not far to seek. The fact that we also are after all animals, is very unpalatable to our egotism and we try to close our eyes to anything that reminds us of it. Let us set aside this false prestige and face facts as they are. Breeding a better human race had been thought of by great thinkers even in the past. Plato in his *Republic* has suggested that the human race might be improved by the methods of stock breeder. Sir Francis Galton is considered to be the father of the eugenics movement in the latter half of the nineteenth century.

In the study of eugenics the scientists have to face many difficulties. Study of human heredity by experimental breeding will be an ideal method, but it is not possible to follow that method without raising a worldwide uproar. Only two other methods are left for them. One is to theorise on the basis of analogies drawn from animal and plant experiments and the other is by collecting statistical data. It is only some aspects of the latter that we are going to consider here.

Most of the information that are available to us to-day, on the subject of eugenics, is mainly based on the data collected by various workers in the past. Two types of study are noticeable in the literature. In one type the scientists took advantage of some of the racial crossings that had taken place, due to some political reason or other and studied in detail the results of such crossings in different generations. In the other type the scientists prepared genealogical trees of several famous and also infamous families and studied the characters inherited. In the latter method the inheritable diseases also were studied. Here, there is no racial intermingling. Some of the following will be the most popular instances oft-quoted in the literature.

As examples of the first type, namely the study of human racial crossings we have first of all the mixing of English and Polynesian bloods in Pitcairn Island. The story of this new race which is still existing and flourishing is a romantic one. It started with the "Mutiny on the *Bounty*". In the year 1788, Captain Bligh was commissioned to undertake an expedition to the island of Tahiti in order to secure plants of bread-fruit tree and introduce them in West Indies. Little the authors of the expedition knew, that this attempt for an agricultural hybridisation is going to result in a healthy human hybridisation. *Bounty* was the name of the ship. On their return from Tahiti to Jamaica, the crew found the harshness and oppression of Captain Bligh unbearable and they mutinied. They put the captain and eighteen of his adherents into a launch and themselves returned to Tahiti. The captain and his companions managed

to reach England after three months of hardships on the unfriendly seas. The British Government sent a warship to bring back the mutineers. Only a part of them were captured, while their leader and nine other sailors escaped to Pitcairn Island along with eighteen natives—six men and twelve women. For twenty years this island was not discovered. In the meantime the English sailors and the few Polynesian women had founded a population which is still existing. In 1856, the population became so large that many of them were removed to Norfolk Island at their own request. This is a fortunate experiment for the scientist. The experiment having gone far beyond the F_1 generation, afforded unique materials for the study of racial crossings. Shapiro (1929)¹ after a careful study of this race mixture concluded that "the crossing of two fairly divergent groups leads to a physical vigour and exuberance which equal if not surpass either parent stock". He found this superiority persisting even after five generations in spite of the close inbreeding.

Another interesting example of such a successful racial crossing was studied by Fischer.² It is the mixing of Boer and Hottentot blood in South West Africa. These form a distinct cultural group and according to Fischer, intelligence, psychic traits, vigour, skin colour, etc., have all been inherited from both the original stocks and now the hybrids are intermediate between the parent races. There are many other racial crossings that have been studied recently in Central America and other places; and all these natural experiments seem to have led to successful production of healthy races. Even in our country the racial crossings between the South Indians and the English in the past has led to a race which is having a better build and good complexion. All this does not mean that such racial crossings must be encouraged in an artificial manner. As a matter of fact it would be a dangerous experiment. It will interfere with cultural inheritances. There is always the danger of social stigma being attached and this may lead to a progressive degeneration of moral and social standards of such hybrids.

Now let us turn to the other type of study and see what it has to tell us. A careful study of the histories of several degenerate families has been made. Unfit individuals mating with unfit individuals gave rise to generations of unfit descendants. These practised inbreeding of the most intense kind. Scientists first wanted to exclude the possibility of this degeneration being due to circumstances and environment. They were therefore, educated, taken out of their environment and placed among good people. In spite of all this they remained degenerate. One cannot but attribute this to homozygous strains with a bad heredity. The two classical examples are the Jukes Family and the Zero Family.

The Jukes Family was investigated by Dugdale (1877)³ in New York State. Nucleus of this family was the five daughters of a lazy and irresponsible fisherman, born in 1720. Five generations were followed up, numbering about 1200 persons. About 300 died in infancy, 310 were professional paupers, 440 were physical wrecks due to their abnormal sex life (more than half of the women were prostitutes), 130 were convicted criminals, 60 were habitual thieves and 7 were murderers. This will be the short summary of the findings. The Family Zero studied by Jorger is a Swiss family. A person with a taint of insanity married a vagabond girl of very vicious character. An equally vicious son was the result. The son marrying another vagabond girl gave rise to a family, the members of which remained thieves, drunkards and physical, mental and moral wrecks for generations. Their value to the world is Zero and hence the name Zero Family. Many other families have been studied similarly. The Killikak family⁴ can be considered as slightly different and gives more valuable information. Here the family arises out of the illicit relationship between a member of good ancestry and a feeble-minded girl. The indulgence of Martin Killikak and a feeble-minded girl resulted in a feeble-minded son and from him many feeble minded lines of descendants. Of the 480 members studied 36 were illegitimate, 33 sexually immoral, 24 confirmed alcoholics, 3 epileptic, 3 criminals and 8 kept houses of ill-fame. Even those descendants who were normal failed to rise above mediocre level. The inferior strain dominated throughout.

Quite the reverse we see in the families of Wedgwood, Darwin and Galton. In these we find quite a large number of great thinkers, statesmen, physicians, etc., of international reputation. The study of genealogical trees of Goethe, Mozart, Bach etc., show clearly the inheritability of the talents.⁵

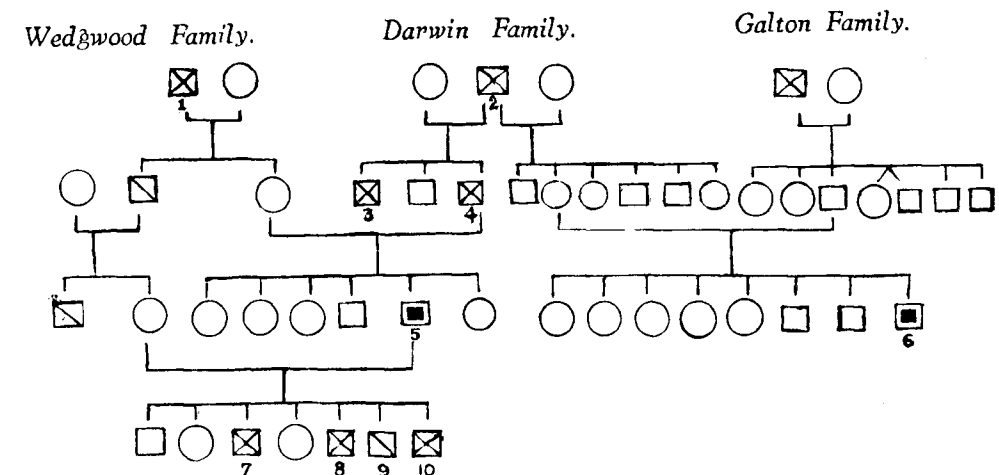


Fig. 1.⁵

Key to Fig. 1.

- ☐ → Male.
 → Female.
☒ → Highly gifted.
☒ → Exceptionally gifted & Successful.
☒ → Of world-wide Significance.

1. Josiah Wedgwood, F.R.S.
2. Erasmus Darwin, F.R.S.
3. Charles Darwin—Gold medalist of Aesculapian Society for Research—Died at the age of 20
4. Robert W. Darwin, F.R.S.—Great Physician.
5. Charles Robert Darwin, F.R.S.—Author of "Origin of Species".
6. Francis Galton, F.R.S.—Father of Eugenics Movement.
7. Francis Darwin, F.R.S.—Famous Botanist.
8. George Darwin, F.R.S.—Famous Astronomist.
9. Horace Darwin.—Prominent Engineer.
10. Leonard Darwin, F.R.S.—Famous Economist.

These examples will serve to show the value of careful matching even in the human beings. Combination of two bad strains always leads to bad strains and two good ones to good ones. As for the combination of the bad and the good the results are not always easy to predict. It depends on the question of the dominance of the strain; however, by careful matching segregations will be possible. Shaw's sarcastic remark to the actress on the question of getting a eugenic baby, no scientist can applaud. The Nature is not so cruel as to combine only unfavourable characters of the parents in their offspring. When judiciously matched the chances are invariably good. Whenever one contemplates marrying, it is always sound to give greater consideration to eugenics than to dowry. Every individual is expected by Nature to leave behind him a younger edition of himself and he must see that it is a better edition. I am only presenting here some facts observed in the past and leave it to the readers to form their own conclusions.

"You must choose your partner carefully, if not you may beget a zero family".

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1. Shapiro, 1929. Quoted by Castle in "Genetics and Eugenics", 1930.
2. Fischer, 1911. "Die Rhehoboth Bastarden", 1911.
3. Dugdale, 1877. "The Jukes", 4th Edition, 1910.
4. Goddard, 1912. "The Kallikak Family, A Study in the Heredity of Feeble-mindedness", 1912.
5. Baur, Fischer and Lenz, "Human Heredity" 1931. A modified form of the chart is presented here.

—★—

If each of us adds something to the common domain in the field of science, of art, of morality, it is because a long series of generations have lived, worked, thought and suffered before us.

—Berthollet.

Some facts about an Apical Systolic Murmur. Its Clinical Significance and Prognostic Importance.

Dr. K. RAMACHANDRA, M.D.

ALLOWING my mind to trace back and recollect the ideas about Precordial systolic murmurs which used to be the topic of many heated argumentation and vehement discussion in my student days, I feel that the present generation of students will be in the same plight about this adventitious sound heard on auscultation at the Cardiac Apex. Many are the interpretations given by the learned members of the profession about this bruit—terms like Relative—Functional—Benign have been used, that I feel something definite should be impressed on the minds of our students who are very fond of imagining systolic murmur where none exists—running to the teacher to confirm such a finding and being disappointed when denied of its existence.

Moreover the significance of a systolic murmur has been interpreted in various ways by many authors that student population have come to regard this murmur, existing alone, as inconsequential and trifling, discovering systolic murmur, when there is mere softening of the 1st sound and speak of it with looseness and carelessness. It may be pointed out that some systolic murmurs which have been termed functional—Benign—Harmless and non-pathological have turned out to be really grave and organic in origin—harmful and malignant. Experiences in this hospital supports this statement and such murmurs should be taken serious cognizance of by the Physician as it may turn out to be of serious significance to the patient. A systolic murmur should be given equal importance as a diastolic murmur and should not be considered as Benign and harmless as it was hitherto.

What is a systolic murmur:—A systolic murmur is one which is heard during systole of the Heart—any time between the beginning of the

1st sound and the beginning of the 2nd sound. It may replace the 1st sound completely. So any mechanism which upsets the production of the 1st sound may be responsible for such a murmur.

The Genesis of the 1st sound depends on 4 factors :

1. Muscular contraction and tension of the ventricular walls at the onset of ventricular systole (Muscular factor).
2. Closure of the auriculo-ventricular valves (Valvular-Factor).
3. Movements and Distension caused by ejection of blood from the ventricles into the arteries (Vascular factor).
4. Residual vibrations due to the preceding auricular contraction of which the first and second factors are important.

Any disturbance of this mechanism can give rise to a systolic murmur which denotes myocardial weakness and valvular inefficiency.

All authors agree that a systolic murmur is organic if it is associated with the following Cardiac manifestations :

1. Cardiac Enlargement.
2. Systolic Thrill.
3. Co-existing Diastolic murmur.
4. Other features of Heart disease—congestive failure.

(By Organic is meant—Disease of the valves of any aetiology).

But when a systolic murmur is present as an isolated feature it can be overlooked and these are termed, according to the teaching in most of our books stands now, as Functional murmurs.

Apart from (Point No. 3) Cardiac enlargement, Systolic thrill and features of Heart Disease as congestive failure, can be present in all conditions where a Functional Systolic murmur is heard at the Cardiac apex, and so how can an organic murmur be distinguished from a functional one? When a diastolic murmur is present with a systolic, the diagnosis is quite

different—Stenosis of the valve is present and systolic murmur is only a result of non-functioning or sclerosis of the valve cusps. Some authors go to the extent of saying that the two can be differentiated by :

1. Intensity and character of murmur.
2. Duration of murmur.
3. Conduction of murmur—all relative terms of theoretical importance.

Many functional systolic murmurs bear the same features as an organic mitral systolic murmur. On visualising the pathogenesis of such a murmur, it will be seen that it is incorrect to treat this murmur so lightly. Elucidating the origin of such a bruit, the question—which comes on first? Is it the systolic murmur or cardiac dilatation?—arises. This fact also becomes controversial but if one understands the pathology of various cardio-vascular states, it is logical to conclude that what is considered as a functional murmur by some is graver than that which is considered organic.

Functional systolic murmurs at the cardiac apex are present in :—

1. Fevers—Febrile systolic murmurs.
2. Anaemias—due to change of viscosity of blood.
3. Tachycardia—Thyrotoxicosis—neurasthenia etc.
4. Myocardial Damage (Vascular factors)—Hypertension—Diabetes mellitus (Atheroma)—Syphilis—Arteriosclerosis Myxoedema—Beri-beri etc.
5. Secondary to involvement of aortic valve—Aortic regurgitation or stenosis—Atheroma of aorta etc.

Organic murmurs are present in :—

1. Congenital Morbus Cordis (Roger's-malady).
2. Rheumatic valvulitis.
3. Bacterial endocarditis.

Considering the 1st group of diseases, it is difficult to explain why a systolic murmur should be present in :

1. Febrile states only in a few individuals.
2. Why should it appear only in a few candidates coming for medical examinations and not in the vast majority of individuals who are also having the same tachycardia, excitement and other emotions of Adrenogenic origin? Systolic murmurs cannot have a predilection to the few unfortunate persons. It has no partiality. This suggests that there must be some organic damage, if not to the valves, to the myocardium. This murmur of myocardial origin is of graver significance than the one due to the former. This damage as already mentioned may be primary due to myocardial inflammation or degeneration, or secondary to a vascular factor—reversible or irreversible. The quiescent systolic murmur has been brought out due to increased rate of flow of blood. Such hearts must have undergone previous damage with minor grades of dilatation not made out roentgenologically, fluoroscopically, electrocardiographically or even on post-mortem examination on the same analogy as Bronchial Asthma where though there is intense spasm no evidence of it is seen on post-mortem examination. These minor grades cardiac dilatation will certainly prove dangerous if neglected.

A few cases have been reported where persons who manifested a systolic murmur—diagnosed as neurasthenia or neuro-circulatory asthenia have turned out to be Hypertensives in later lives showing that these were potential Hypertensives. They often have slight fever, show flushing of skin and neck, and have nose bleeds—all manifestations of vascular vulnerability. Their myocardium has suffered from vascular insults and though not presenting any signs at rest develop a murmur when excited due to tachycardia. The same phenomena holds good for a febrile systolic murmur which is evident in some and not in others. It develops when toxicity is high especially in Diphtheria, Typhoid, Fever, Pneumonia etc.; only in such of those whose myocardium was the seat of previous damage by other aetiological factors. A damaged myocardium suffers more than the undamaged. The systolic murmur signifies dilatation of mitral ring. Myocardial damage in syphilis Hypertension etc. produces the same change in the mitral ring.

The presence of an apical systolic murmur, though it is the so called functional "murmur" is therefore of a grave significance and importance to the physician to assess the state of the myocardium. It should not be brushed aside lightly.

The student should thus come to know that systolic murmur at the cardiac apex precedes myocardial damage and possible dilatation which though not evident clinically or fluoroscopically becomes evident on increasing the heart rate. Potential damage is hereby made evident. This dormant damage may often be the cause of failure in hearts which are just keeping a balance; fever, strain, exercise or emotion precipitating this disturbance of balance.

It may be emphatically stressed that systolic murmur never precedes potential cardiac damage except in those cases where the mitral valves are destroyed by trauma or bacterial-endocarditis. Even in the last mentioned condition, a certain degree of myocardial damage occurring simultaneously contributes to the murmur. Going a step further, it can be said that apart from bacterial endocarditis, all murmurs heard at the cardiac apex are myocardial in origin thus driving to drop the term functional systolic murmurs whereas in bacterial endocarditis the murmur is endocardial in origin with myocardial contribution. The other apical systolic murmurs of myocardial origin are of graver significance than the purely endocardial one. Mitral valve which is designed to close so efficiently cannot fail to do its function in the so called Functional states as tachycardia or lowered viscosity of blood in anaemias. Its function fails only when the mitral ring has given way due to cloudy swelling, fatty degeneration etc. of the myocardial fibres which characterise these febrile and toxic states.

Genesis of a Systolic Murmur in Rheumatic Fever:

The apical systolic murmur heard in Rheumatic fever is suggestive of myocardial involvement and not indicative of mitral valvulitis though it may be present side by side as rheumatic inflammation produces pancarditis. Once valvulitis and rheumatic vegetations develop on the mitral leaflets, scarring, retraction and adherence of the Valves are apt to result, with stenosis of the orifice giving rise to an endocardial murmur. At that stage a diastolic murmur with a co-existing systolic murmur is present with other evidences of myocardial damage as cardiac enlargement, arrhythmias and heart block etc. So, the significance of a systolic murmur in rheumatic myocarditis is only that of a passing and transient phase in the development of the more persistent mitral

stenosis with a diastolic murmur. But now and then patients are seen in whom systolic murmurs have been present from the beginning and it persists almost to the end of their lives especially in young rheumatic subjects. These are cases where myocardial damage has been a predominant feature of the rheumatic infection with little or no endocardial inflammation. The myocardial fibres in these individuals ultimately lose their tonus and become replaced by fibrous tissue. So in a small percentage of cases stenosis will not be the end result of rheumatic fibrositis but regurgitation, where prognosis is more serious as the reserves of this myocardium are early depleted.

We have followed 3 such cases of rheumatic mitral regurgitation who were mistaken in the early stages for patent. I. V. septal defect, later for bacterial endocarditis as they used to come to the hospital with fever and congestive failure, later proved to be rheumatic in origin. These are the type of individuals in whom rheumatic infection is in a smouldering state with explosive manifestations now and then. With each exacerbation, the myocardium suffers more and more damage ultimately they go into a state of invalidism with enormous cardiac dilatation. We have never seen this state of affairs occurring in rheumatic mitral stenosis. Mitral regurgitation is a permanent condition once established. No retrogressive changes occur since the myocardium is severely and irreparably damaged. Apical systolic murmurs heard in hypertensive heart diseases. Arteriosclerotic heart disease and other rarer myocardial degenerations like scleroderma heart, Myotonia heart etc., are a result of myocardial fibrosis with cardiac dilatation. When once heard, they are always heard and its presence in these conditions should be treated with the due consideration as it indicates irreversible damage.

Systolic murmur in heart block may be the result of a mechanical factor leading to stretching of the left ventricular cavity and also due to the factor which gave rise to heart Block acting on the myocardium. Here also the condition is irreversible.

Reversible Heart Disease:

1. In Thyroid heart disease:—Thyro-cardiacs or myxoedema systolic murmur at the apex is due to degeneration of the myocardium and dilatation. Such a murmur can disappear with proper treatment unless myocardial fibrosis has supervened. This condition can be predicted with certain degree of accuracy when paroxysmal auricular fibrillation if present changes on to persistent auricular fibrillation or when congestive heart failure develops.

2. In Beri-Beri heart, retrogressive changes supervene with proper treatment with disappearance of the apical murmur.

3. In Anaemia, retrogressive changes do occur if treated early, but later fibroid changes are liable to supervene with persistence of the murmur. So systolic murmur and haemic murmur should be treated seriously as sudden death is possible when such advanced changes in the myocardium have taken place. In Acute cardiovascular Emergencies such as (1) Acute left ventricular failure due to aortic valvular disease, Hypertension or Coronary sclerosis (2) Paroxysmal tachycardia (3) Toxic myocarditis in fevers etc., systolic murmur at the cardiac apex is usually associated with gallop rhythm, diminished vital capacity—all ominous signs of impending dissolution of failing myocardium and pulmonary oedema is liable to supervene if not recognised and treated early. Once the paroxysmal attack subsides there is diminution in size of the heart if the disease is of recent onset.

SUMMARY

So concluding, apical systolic murmurs occurring in the younger age group where no cause could be ascribed, and if present for a long period, should be taken as rheumatic in origin even without the typical history of pain in joints, sore throat, profuse sweating etc. as certain atypical manifestations are present which are liable to be missed.

In the middle aged due to myocardial fibrosis. After exclusion of Hypertension, Syphilis, Thyroid, Beri-beri, etc. . . rarer myocardial degenerations should be borne in mind. Thyroid heart disease or potential hypertensives should not be forgotten. In the older age group, as arteriosclerotic in origin. Whatever be the age group, apical systolic murmur is indicative of myocardial atonia.

—★—

Asked if he was well G.B.S. replied 'At my age young man you are either well or dead'!

—

When asked by a woman how she could find out whether she was in love Somerset Maugham replied 'If you can use the same tooth brush without repugnance that is a sure sign'!

—Old Latin Proverb.

Dr. K. N. Krishnan

(1893 to 1950)

Dr. K. N. Krishnan was born at Calicut on 17th September 1893. He had his early education in Basel Mission High School at Calicut. He graduated from the Madras Christian College in 1914. After his graduation he joined the Madras Medical College and took his M.B. & B.S. Degree in 1919. He was granted a temporary commission in the army and he spent most of his service in the North West Frontier Province. In 1921, he was released from the army and was appointed as Assistant Surgeon at Krishnagiri. Later he was transferred to Tanjore as Lecturer in Chemistry in the Medical School and soon he was sent to Vizagpatam as Professor of Chemistry. He was again transferred to Tanjore as Lecturer in Physiology this time, under Lieut-Col. Dr. Lorrimer. In 1931, he was transferred to the Madras Medical College as Assistant Professor of Physiology. It was here that he worked for his M.Sc. Degree, which he was awarded in 1941. He was appointed Additional Professor of Physiology in 1945 which post he held till his retirement in 1948. He breathed his last on 3rd June 1950, leaving behind his wife, a daughter and a son and a wide circle of friends, colleagues and students to mourn his loss.

In his death, we have lost an eminent teacher in Physiology. He was loved by one and all and he leaves behind a sad memory of the pleasant past in which we were associated with him. His kindness and his gentle ways are still fresh in our minds and though time may heal many sorrows, it cannot efface from our memory this sad loss that we have suffered.

IN MEMORIAM



Late Dr. K. N. KRISHNAN, B.A., M.B.S., M.Sc.

IN MEMORIAM



Capt. Dr. DAVIDSON DAVID, M.S.

★ *They lived - they died. Temples were dedicated for those who lived nobly—memorials for those who died nobly. In the pages of history, their lives are written in letters of gold. But the ideals they upheld and the causes they stood for.....*

They Lived They Died

‘HERODOTUS’

ONCE upon a time there lived in far off Kapilavastu a Prince. His name was Siddhartha and his family name, Gautama. He was born in the humbini grove, near Kapilavastu, a few clays North of Benares, where his father was King. Siddhartha saw suffering, death, disease and old age, and filled with a deep compassion for the human race, he left his father's court, his palace, his wife, the beautiful Yashodara and his child, Rahula, at the dead of night. He shaved his head and gave his costly robes away and became a wandering beggar, forward, ever forward in the determined quest for a solution to rid the world of sorrow.

He lived for years in solitude till one day, under a Bodhi tree, he suddenly penetrated the mysteries of life and became the Buddha. He taught his faith, ‘Ahimsa Paramo Dharma, Himsa Lokasya Nasha’. Soon he died and those who could not kill him in life, killed all his followers or chased them away and Gautama the Buddha was forgotten together with his teachings.

Then came a man, who asked the people to love fellow men, return good for evil—feed the hungry, clothe the naked, visit the sick, love thine enemy! and he was crucified. They called him Christ.

‘You are my friend and I would give you my life willingly, any day, but tell me why? Why do you fight us? Why do you want to oppress us and rule over us? Why do you want to destroy our culture and religion? Why do you want to give us your God? May be your God and My God are the same; you call him Jesus, we call him different—but Captain, this is my country and these—my people and so my captain I will fight you to my death though you are my friend!’

Gautemoe the last of the Aztee emperors spoke thus to Cortez as he was tortured to death by him. It is no sin to fight but it is a sin to lose the fight.

A man at the foot of the gallows said 'Gentlemen! I am not a traitor for I never was your subject, I waged war and as a prisoner of war may be shot but never hanged. I demand justice!' He was hanged, Tantia Topi of the Great Indian Mutiny! A man in a temple is trying to commit suicide. People rush in, rescue him and expert medical attention is given to him. He recovers. He is marched into a court. The court pronounces 'Prisoner on the dock, we find you guilty of grave crimes and therefore sentence you to be hanged by the neck till you are dead.' The Prisoner, a short stubby fellow does not show any trace of emotion, he listens carefully, bows and says 'After my death I choose for my name Ishoin Shakuji Homoyto Koji or crimes committed in life are atoned by death'. He was Tojo. His wife said 'When my country surrendered my husband died a spiritual death, his physical death means nothing. Thousands of families in my country suffered this calamity during the war. I have nothing specially sorrowful to bear'.

Five brave men march against Dublin Castle on one Easter morning armed with nothing and the leader says 'We will die - but our spirit will live and rouse anger and freedom'. A roll of gun fire is heard and the men lie kicking in the dust.

On a lonely island there lived a saint, and a sinner and the sinner killed the saint and buried him. Years passed and the seeds of the sinner multiplied and were as the sands on the sea shore. So it was in later years, the sinner the saint and the saint the sinner!

Is it as Lenin said? Comrade, the most precious possession you have is your life. So you must so live that at its end you can be happy, so live that you can raise your head up, in honest pride and look at others; so live, that when you die you have no regrets.

Is it wrong to love one's country? Is it a crime to be proud, or to be human? Is it a sin to be born at all?

Thus they spake through the ages and they were killed—for surely they must be dangerous! Fellows with convictions, fellows who are like these!!

But dear friend, Are you quite sure?



Lieut. K. P. SARATHY.

Ex Officier Commandant, 'A' Coy Medicals, 1st (M) Bn, F. O. T. C., 1946-48, and Ex Company Officer, 6th Madras Medical Company, N. C. C., 1949-50.



Dr. T. R. RANGASWAMI, M.B.S., D.S.S.
Our new Professor of Hygiene.

Hans Selye and ACTH

Dr. B. RAMAMURTHI, M.S., F.R.C.S.,

Montreal Neurological Institute.

IT is the chief talk of the medical world to-day. The words ACTH, Cortisone and Diseases of Adaptation are heard louder and oftener than any others. The lay press too has taken a great interest in this newer conception or newer elucidation of certain very old diseases. I do not know of the Indian Press, but the British and American Press, present from time to time this news to the public who are of course very interested. What is this new elucidation and whose idea is it?

Many experimental and clinical workers are responsible, but the chief of them is Hans Selye. (Professor and Director of the Institute of Experimental Medicine and Surgery, Universit  de Montreal, Canada.)

It was so bright and sunny outside. One was reminded of our own summer mornings when the temperature during the day could reach well over a hundred. But still one wrapped himself with scarfs, great coats, caps and ear muffs and set out into the street—it was 28° below freezing point. This was in the picturesque city of Montreal, an island in the great River St. Lawrence, on a February morning and Dr. M. V. G.* and myself took a cab to the Montreal University.

There are two Universities in Montreal, both outstanding: the McGill and the Montreal Universities. The latter is situated on the northern side of Mount Royal, the hill around which the city of Montreal has sprung. The icy roads, with the white foot paths, the snow covered houses and farms, the white waving leafless trees with icicles hanging

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from them all were glistening in the bright sun and it was 9-15 a.m. when Prof. H. Selye received us into his Library. From the huge window of this spacious room, one looks down on the northern side of the City of Montreal, and gets a glimpse of a white line which is the icy River St. Lawrence and beyond that the slow rising hills leading to the Laurentian Mountains. One felt instinctively that such a view of nature's majesty can certainly inspire one to get a more basic view of another aspect of nature, namely physiology and disease.

With an easy charm of manner and complete absence of self-importance, the professor enquired about us and paid a tribute to the various academic personalities from India who visited Montreal recently--the Vice-Chancellor of Madras and Dean of Lucknow most among them. On being requested to give a short resume of his ideas and work, he told us the details, a brief summary of which is given below, trying to avoid all the technical details as much as possible and presenting the basic concept only. There are still a few doubts to be cleared up but work is proceeding now on those lines.

Mankind for ages has known many diseases whose cause could not be found entirely. Within the past hundred years our knowledge of the causes of disease and their course has advanced considerably, but still there are a number whose cause we can only surmise and whose cure we can only experiment. Consider for instance the following Bizarre group: A. Rheumatic and Rheumatoid arthritis, B. Nephrosclerosis and hypertension C. acute and chronic gastrointestinal ulcers with no definite aetiology, D. a variety of skin diseases E. certain types of myelitis and encephalitis etc. etc. So many theories have been advanced as a cause of these diseases and hundreds of experiments carried out. Similarly very many methods of treatment have been suggested and carried out, but no one method has succeeded in all cases. In addition to worrying the physicians and patients alike, what a nuisance it is to the medical student who has to mug up so many theories in Aetiology and remember the particular method of treatment which each examiner prefers!

But all theorists are agreed that though there may be many aetiological factors concerned in these diseases, one important and necessary basis before the disease can set in, is what they called Tissue Susceptibility or absence of Tissue Resistance. What this Tissue Resistance to these diseases was nobody knew exactly and this is what the work of Prof. Selye and others sets to explain and find out. Over a number of years many experiments were carried out in rats and other animals and correlated with clinical observations.

All organisms are subjected to changes in environment; adaptation to changes in Environment is the Process of Living. Any sudden change in the Environment is a 'stress' to an organism. Under this stress, the organism has to adapt itself quickly, if it has to live. This stress may be physical, chemical, bacterial, psychological etc., and the mechanism of adaptation to stress was called by prof. Selye, Adaptation Syndrome.† When this adaptation fails, Diseases of Adaptation result.* This Adaptation has been found now to be chiefly brought about by an endocrine mechanism, consisting of the Pituitary and the Adrenals—the Hypophyseo-Adrenal Axis.

Under any stress, the Pituitary produces a hormone called Adreno Cortico-Trophic Hormone (ACTH) which influences the adrenal to produce Corticoid hormones. These are of two types—mineralo-corticoid and glucocorticoids. Normally there is greater production of the glucocorticoids (cortisone) than the mineralocorticoids (DCA) and this is beneficial to the body to mobilise its defence against stress. This has been proved by experiments on rats which were subjected to different kinds of stress (cold, muscular exercise, fright, anaphylactoid reactions resulting from foreign proteins etc.) These rats developed a variety of lesions similar to the group of diseases enlisted above. These lesions could be prevented or cured by the administration of either ACTH or Cortisone and could always be aggravated by DCA.

Thus any upset of this ration of mineralo and gluco corticoid production resulted in an upset of the adaptation syndrome, leading in turn to Diseases of Adaptation. Prof. Selye believes that these diseases of adaptation mentioned below are the direct result of the endocrine adaptation mechanism. Be it noted that the existence of all the aetiological factors postulated by earlier workers of these various diseases is not denied. But it is suggested that these factors are not of prime importance. If the adaptation mechanism is functioning properly, these factors cannot act.

There remains the question, why certain people (or certain rats in experiments) should develop lesions in certain organs for e.g., the joints, while others develop skin lesions or kidney lesions. The present hypothesis is that during the upset of this adaptation mechanism, the weakest link of the body structure is affected, the weakest link being determined by local tissue conditions and local environmental conditions. e.g., high Na. intake for nephrosclerosis.

Thus in brief is given the hypothesis of the newer conception with experimental and clinical proofs. Its far reaching clinical and therapeutic

THE GRADUATES RECEPTION.

possibilities are obvious. Clinically Cortisone and Acth are being tried in many of the diseases mentioned with remarkable success. Given below is a list of diseases of adaptation from Prof. Selye's Textbook of Endocrinology. It may be seen that all upsets of the Hypophyseo-adrenal mechanism have been included in it.

One can realise how very essential is basic research for any far reaching advancement in medicine. To make our own original contributions to the field of medical science, it is obvious that original and integrative thinking must be encouraged and basic research and science must be built up however great our present limitations may be.

REFERENCE :

1. Hans Selye. The General adaptation syndrome and the diseases of adaptation. Journal of Clinical Endocrinology 6, 117 (1946).
- Hans Selye. Text Book of Endocrinology Montreal, 1949.

Diseases of Adaptation due to Endocrine Disturbances.

1. HYPERFUNCTIONAL :

A. Primary diseases of endocrines which participate in the general adaptation syndrome.

1. Cushing's Disease (pituitary hyperfunction).
2. Adrenal tumours with "Cushing's Syndrome" (Adrenocortical Hyperfunction).
3. Chromaffinomas (Adrenal-Medullary Hyperfunction).
4. Coarctation of the renal artery and other primary diseases of the kidney conducive to hypertension. (Renal Hyperfunction-Hormonal).

B. Secondary diseases due to excessive (or abnormal) response of endocrines to stress.

1. Some types of hypertension.
2. Periarteritis nodosa (Also arteriosclerosis and other capular lesions) !
3. Nephrosclerosis.
4. Some types of Nephritis (?)
5. Rheumatic diseases (?)
6. Waterhouse-Friedrichsen Syndrome.
7. Eclampsia (?)
8. Accidental thymus involution.
9. Some types of Appendicitis (?)
10. Some types of Tonsillitis (?)
11. Gouty Arthritis (?)
12. Some types of Diabetes.

2. HYPOFUNCTIONAL :

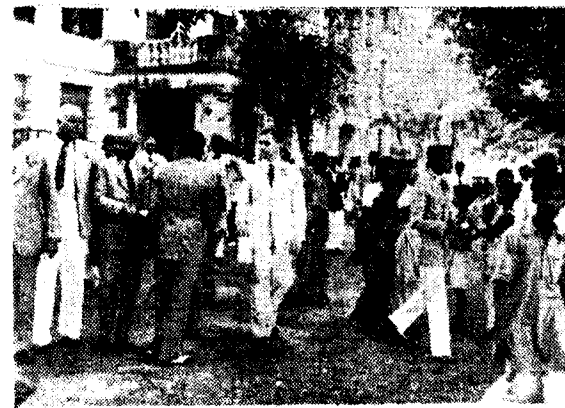
A. Primary diseases of endocrines which participate in the General adaptation syndrome.

1. Simmond's Disease (Pituitary Hypofunction)
2. Addison's disease (Status thymicolymphaticus ?) (Adrenal Cortical hypofunction).

B. Secondary diseases due to insufficient response of endocrines to stress.

1. Secondary shock (Relative hypocorticoidism) ?
2. Acute gastro intestinal erosions. (Curling's Ulcer).

Dr. Paul W. Brand



The Arrival.

Dr. Paul W. Brand



Addressing the Graduates.

-Viswanatha Rao.

-Viswanatha Rao.

Dr. Mrs. Parvathy Devi



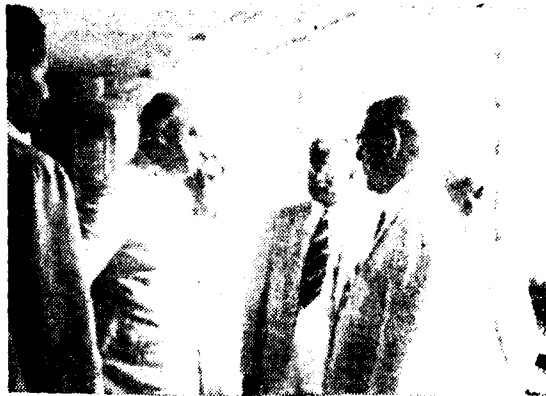
The best out-going student and the Johnstone Gold Medalist of the year.

The M. M. C. Formation



-N. J. Antonio.
On the Sands.

THE INAUGURAL DAY



Amidst Friends

Viswanatha Rao.



The Address.

Viswanatha Rao.

The Independence Day.



Flag Hoisting.

Viswanatha Rao.

At Poonamallee.



Fourth Years at Health Centre.

S. Thyagarajan.

Poem

When lips formed a cross
I cried--Mother! O little mother!
Smother this cloudy child
Dark and dead is the storming weather!

She smiled and sobbed
And whispered--Father! O little father!
I am but bare barren earth
Drench me with your embalming shower!

—DUTTA TREYA.

★ "Three things cannot be hidden—love,
smoke and a man riding a camel"

(AN ARAB PROVERB)

A fourth must be added—a recent hair-cut

On Going to the "Saloon"

V. V. V. MENON, B.Sc.

I happen to live in a College hostel accommodating 300 bipeds. A multi-lingual, multi-communal hostel, full of multi-motivated persons, in multifarious and very often multi-coloured costumes. You see, it is all a multi-jumble. But if there is any striking uniformity of opinion on any subject under the sun, a dead unanimity of execration, it is on the subject of having to go to the "Saloon".

What a luxuriously accented word—"s-a-loon" My, doesn't it bring to mind all the luxury of a Trans-Atlantic liner, the opulence of a Holkar, the magnificence of a Mughal monarch and the untouchable, unapproachable aloofness of those petty Railway demi-gods whom you see comfortably ensconced in their special saloons, when you yourself are struggling for the right to breathe in a Sardinian III class compartment. (Note:—Sardinian—"packed like sardines"). Who would, on the face of it, diagnose this softly sibilant 'S-aa-l-oo-n' to be the inquisitorial arena it is! Who would expect this fragrant word 'S.a...l...ooo...n' to spell for you a monthly hour of torturous manipulation at the dexterous, if indecorous hand of the barber! For the 'saloon' I am referring to is the barber's saloon.

Time was, when, stretched out in the most comfortable of the most ramshackle of the chairs in the house, you could graciously lend yourself to the apologetic ministrations of the family-barber. With the advancement of civilization, however, the family-barber has disappeared out of existence; probably because the family itself, as a unit, has disappeared out of existence. And now when the inevitable day comes round, you put on your oldest bush-shirt that still retains its last remnants of

respectability (for you have to go by Bus and face the quizzical appraisal of conductors who are great connoisseurs of class) and wend your wary way to the saloon of the least aggressive of the barbers you know of and with quiet trepidation, creep into the ante-chamber and await your turn in silent and if possible, smiling resignation, hoping to catch the eye of the head-barber—i.e. if you know who the head-barber is; if you don't, I would advise you to put on the vague toothy smile that is supposed to go with imbecility but which I find from experience impresses barbers very strongly in your favour. In the meantime, you fill in your time (without of course letting any thought, however funny or profound, disturb the settled imbecility of your expression) by pondering on the historical significance of multi-dirty-coloured glass panes invariably associated with barber-shops. Or perhaps your eye wanders towards the framed photos of various damsels whose common feature is a salacious scantiness of apparel and a marked accentuation of anatomical protuberances. And then—tired of such abstract exercise, you start casting furtive glances at your fellow victims. You find registered on their faces a whole variety of human emotions ranging from extreme boredom to patient resignation. You notice in particular a young perfumed dandy, lounging about, dressed up to the nines and sleek hair brushed back; you may rest assured that he has come to get his mousch, trimmed and also that he is the pet of the barber and so will receive earlier attention than you, though he came in full five minutes after you. Well, there is no use envying him for here Fortune's favours are synonymous with the barber's favours and it is useless quarrelling with either. All the same, you feel rather clever because no one else seems to know the tricks of the trade, for they are all keeping such staid faces. But still, you too are condemned to wait, in spite of your idiotic grin stretching the angles of your mouth. So you wait—and wait.

I spoke about the inevitable day. How do you recognise this inevitability? I'll tell you. It is simple. For the whole of the past week, your friends have been making it a point to tell you. The day before yesterday they started a subscription for your Hair-cutting Fund; and they actually collected 4 as. too. Not that you got a pie of it, of course, for the two sponsors of the Fund had coffee in the Canteen instead, for all the trouble they went to, for your sake. And yesterday, your girl-friend—i.e., your way of designating the girl who you imagine is your friend; or rather the girl who takes all the liberties of a friend with you, without of course letting you take any with her—well, your girl-friend asked you, with exasperating objectivity and some truth, whether you were qualifying to be a Kathakali dancer? What could you do, except grin foolishly? Moreover these last few days you really have been feeling rather weighty about your head which is strange, considering

how light-headed you generally are. And there seems to be a curious and pernicious relationship between the length of your hair at the back and catarrhal affections of the upper respiratory passages. All in all, the day comes round which you simply, inevitably recognise to be the inevitable day—and with the feeling of Fate heavy on your shoulders, you take off from the hostel. And who is there to see you off, just when you would much rather passout unnoticed? Why, only a gay young party of your friends, friend's friends and friend's relatives. How is it that they immediately instinctively, smell out your destination? Well, they do—and how they let you know they do!

Ah, there he is—the presiding deity. Is that authoritative hook of the finger and the flourish of the hand for me? Yes, it is. You straighten up your back and feeling only slightly unsteady on your feet, stumble into the holy of holies, the operation theatre, the sanctum sanctorum of the saloon. He wastes no time; he waves you into that high chair that obviates any undignified stooping on his part though you feel sort of left high and dry for you cannot touch the ground with your feet, once you have vaulted into that altitudinous chair. It is even upholstered; for this is quite an aristocratic institution; what if the upholstery feels harder on your seat than a mere wooden chair? Why, there are as many as 3 porcelain wash-stand basins too, for the matter of that, with two taps each attractively labelled 'hot' and 'cold'; what if you can get neither hot water nor cold from either of them? Such delicate things of marvel are not meant for the mere vulgarity of human convenience; one could as well ask why there should be Royal Guards to guard the Buckingham Palace when dogs have had to be recruited to protect it against intruders. Their presence is dictated by a high sense of aesthetics; if you don't have such a sense, well, it's your funeral, brother. It is a swivel chair, too. How do you expect his Greatness the Barber to tramp round and round you as if you were some prize elephant? Of course, the way you are yanked round and about, this way and that, it doesn't take much time before you lose all sense of direction and space and time. The mirror that was in front of you when first you started on your revolutionary travel is no help at all, for all the walls of this cubicle are plastered with mirrors. The mirrors, by the way, seem sort of cruel to me; they are so honest—the barbers thrive by leaving all the honesty to the mirrors—they reveal to your tremulous gaze the exact amount of damage done, if you are masechistically inclined enough to look into them for confirmation of the dreadful feeling of calamity you already have in your breast. This institution is not merely aristocratic; it claims to be hygienic too. In proof of which you find before you a dish—a closed dish, closed mind you, to keep away the germs—of alleged talcum powder which, looks like slaked lime and smells like Holy Hallelujah.

Meanwhile, you are cowed down by the close, if intimidatory attentions of the chief himself. He flips a much-laundered but moderately clean towel round you. Well, if not round you at least all down your front, imprisoning your arms effectively; he ties it up at the back, so much so that all the surplus hair at your back—and you have it mostly at your back,—falls right through your bush-shirt to muzzle lovingly against your bare back. But at least no one else can see it there and let us be properly thankful for small mercies. Of course, you might feel as if you are carrying a bundle of blanket-worms on your back but what is self-control for, if not for use on such occasions? (as the wife told her husband) when his trousers split as he was bending over to give away the prizes) And now starts the real ordeal—all these have been only the preliminaries. What happens after can never be described nor even imagined but only experienced. How badly it makes a man feel can be understood when I say that this is the only time when I feel I should have born a woman. You surrender yourself entirely to his tender mercies. If you are man enough, you tell him in your smallest voice, not to cut your hair too short. He just looks at you at that. You are effectively silenced. He darts his hands towards the gleaming array of his instruments of torture. He grabs hold of a wicked-looking contraption with two divergent handles and a horribly toothed central piece. He handles it with supreme ease, and approaches it, with the deadly intention of approximating it to your tender skin. This is the 'Machine'. Of all the fulminating evils of a mechanized world, this 'Machine' represents the acme; this machine is the epitome of all the noxious principles that have reduced man from his high estate to become the slave, the victim of the inhuman machine. Beware of it, my brethren . . . it is the Devil's authentic invention . . . Let it not approach within a yard of you . . . Collect all your reserve moral energy, overcome all your unmanly trepidity, tell the barber in plain words and firm, that *you-will-not-have-it*. He might look at you as if you were some perverse ourangoutang that refuses its rationed banana. But take no notice. He will comply; do not be intimidated by the furious clash of scissors and comb by which he proclaims his chagrin at the frustration of his predatory ambitions on your head. Keep as calm as you can; you have just achieved a signal success—you have robbed him of his chief offensive weapon—he feels like a Bradman unable to use his devastating pull-stroke.

If you are a person free from myopia, well and good; you can follow the different stages of the ravishment of your head. But if you are like me, having to aid the God-given eye with the man-fixed lenses, woe unto you . . . Without my glasses, I'm so blind that if Rita Hayworth were to parade before me in her briefest costume, I would cast on her the most cursory and perfunctory of glances only. Well, the point is, the

moment you settle down, the barber firmly removes the specs, and deliberately or casually, deposits them yards out of your reach. So much so that you are aware of the extent of the ruin done to your beautiful hair only through the thickness and length of the clusters of cruelly sundered hair as they fall in perished glory round you. You feel so helpless; you just resign yourself to the questionable charity of this hour-long monarch of your cephalic destiny. You, willy-nilly, learn the doctrine of acceptance. That is why I would advise you to read the Sermon on the Mount or a chapter from the Upanishads before you venture out to this saloon.Your head starts feeling wobbly on your neck; you wish you were a new born babe for the latter can rotate its neck right through 180°. Your head is aching; your senses are swimming; you are bathed in sweat; you are on the verge of nervous collapse. When suddenly with a final finicky snip or two he announces the finale. But not yet—hold on. He has to powder your assaulted skin yet—Glory Hallelujah! He takes out a bottle with a funnily curved nozzle with a spray and liberally sprays your hair, dousing the upper half of you in the process. He next pomades your hair with a pomade that is an apology for a pomade. He combs and sets your hair following his own arbitrary inclinations; steps back, surveys you and smiles in self-appreciation. Now you know you are free to go. You are casually dusted; to remove all the bits of snipped hair that might have fallen too obviously on you—if you think that is exactly the way you dust your pet dog at home, well it will teach you to be more human towards your dog next time. Some barbers are so enthusiastic about their job that they exhibit territorial ambitions even on your moushch. It is up to you to escape somehow. You make haste to pay up your bill and step out for home.

And so you set out for home. If there is a sun, it is hot against your denuded nape; if there is a breeze, it is annoyingly cool just there. You wish with all your might that no one should be at the hostel gate. And whom do you accost first? Well, the same gay crowd that gave you such a warm send off. You sight them from a distance and go stiff of gait and rigid of bearing with self-consciousness. They too sight you from the distance; their lips start parting and their teeth start showing until they achieve ear-splitting smiles—smiles 'that could eat a banana sideways' You start feeling a halo round your head; their gazes are unanimously fixed on that. They collar you; they turn you round and round; they inspect and they comment; they palpate and they comment; they comment and they counter-comment. By the time they finish with you, you feel about as huge as a medium-sized caterpillar. Oh, you think they have finished with you? No, no; they follow you to your room. They switch off the light or shut the windows and pretend to be able to read in the radiations your head is supposed to give off.

Some of them declare themselves blinded by the aura. They ask you whether you went to the local motor work-shop for your hair cut. They ask you whether you paid the barber or the barber paid you; the latter in case you allowed the barber to do some experimental research on your head. You clear them out of the room with difficulty and then go for your bath. You get rid of the bundle of blanket-worms with equal difficulty. Then you timidly look into the mirror. Generally you agree that the scoffers were fairly justified. Sometimes you feel indignant.

And is it any better at College? Oh no. The same story is repeated, continued in serial fashion for minutes, hours, days, weeks. And what has your girl-friend to say? If I am to judge by my experience—well, I'll relate my experience; you do the judging. She said, thoughtfully, "I used to think you looked dashed funny with your hair long. But now I think you look even funnier with your hair off!" Well, nobody expects consistency in a woman—not the sort of consistency I mean anyway—but this was really carrying it a bit too far. What could I say? I just replied, gloomily, "Make it short, sister; say I look funny all the time and be done with it."

Well, that's how you went to the saloon—And returned . . . And that is how you are going again too . . . to the S . . A . . L . . OOOO . . N . . .

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The mind has a thousand eyes
And the heart but one
Yet the light of a whole life dies,
When love is alone.

—F. W. Bourdillon.

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There is so much good in the worst of us
And so much bad in the best of us
That it ill-behaves any of us
To find fault with the rest of us.

—Anon.

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Woman's faults are many
Men have only two
Everything they say
And Everything they do.

—Anon.

Some Aspects of Thyroid Pathology

P. RAMAMURTI, B.Sc., M.R.B.S.

THE pathology of the thyroid gland is perhaps like the riddle of the Sphinx. But with recent clarifications and elucidation in the fundamentals of the physiology of thyroid one wonders whether, after all, it was only a case of a "Sphinx without a secret". The apparent contradictions and paradoxes of an enlarged thyroid with hypothyroidism popularly called Goitre, or almost normal sized thyroid with severe thyrotoxic symptoms, cease to be a mystery when the essentials of thyroid physiology are studied. The metabolism of iodine with which the pathology of thyroid is intimately linked must be first studied and is represented diagrammatically in (fig. 1)

Metabolism of Iodine:—Iodine is taken in with food and water. The iodine content of the food being dependant on the soil and locality, iodine deficiency is in the main, a matter of geography. Iodine in whatever form it may be ingested, is converted into, and absorbed as inorganic iodide. The inorganic iodide is taken up by the thyroid gland with great avidity and is converted, through progressive synthesis, into organic iodine. Tyrosine is first iodinated to form di-iodo-tyrosine. The conversion of di-iodo-tyrosine into thyroxine involves an enzymatic process called peroxidase. This is an important step in the chain of synthesis.

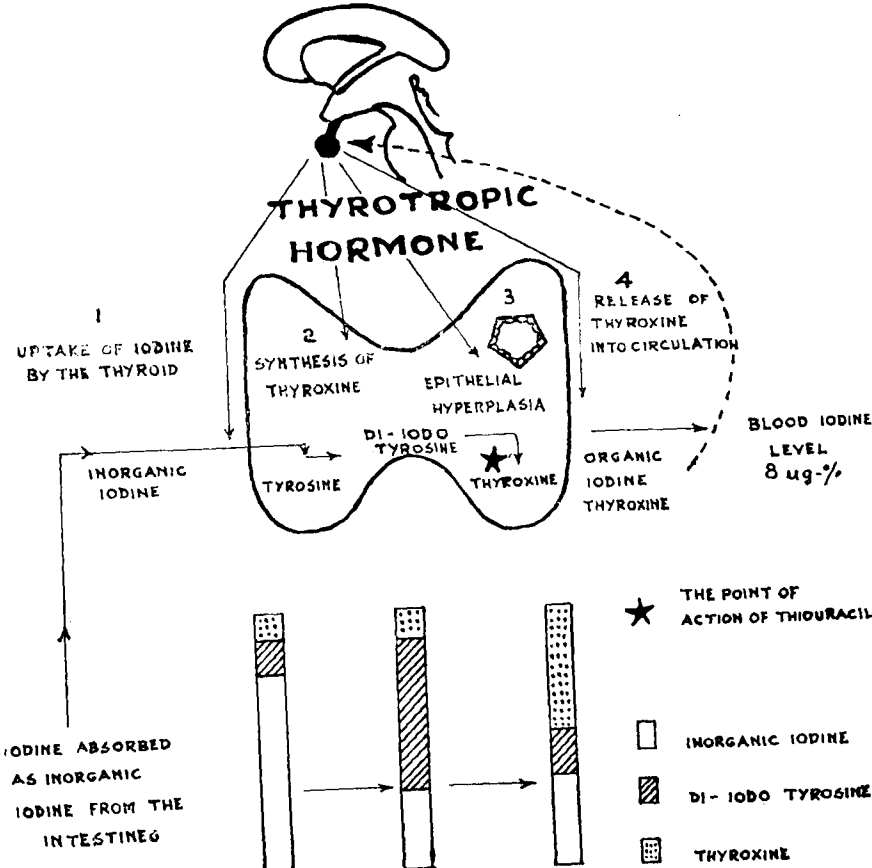
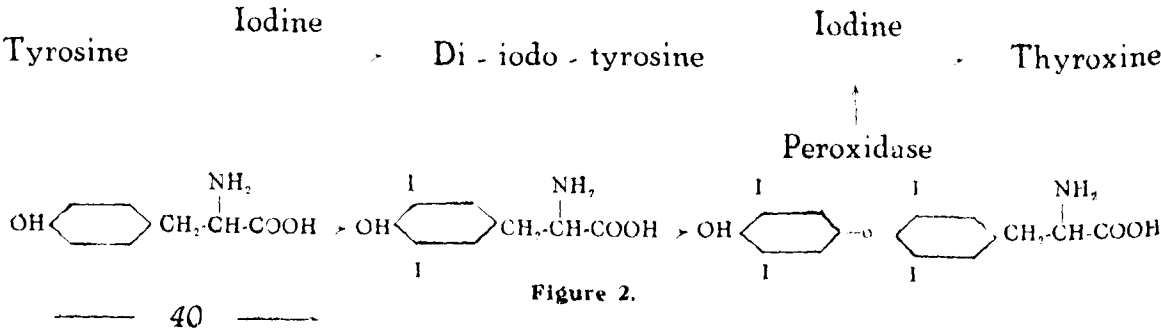


Fig 1.

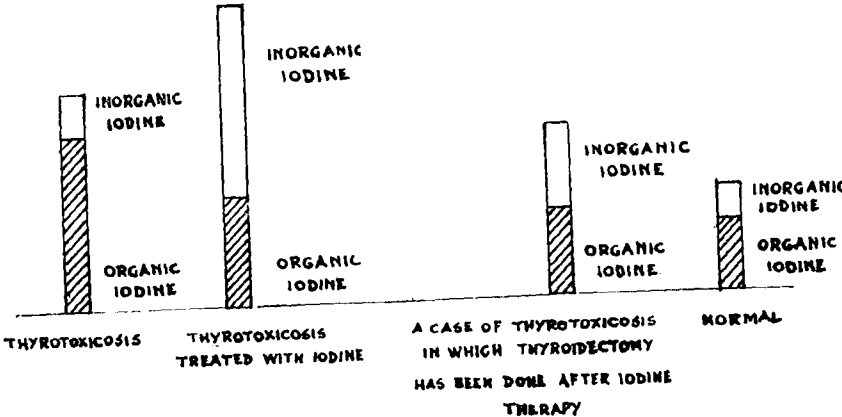


Fig. 3.

Diagram showing the relative changes in the Organic and Inorganic Iodine in Thyroid (Normal and Disease).

While, soon after ingestion of iodine, the proportion of inorganic iodide would be high in the thyroid gland, as synthesis proceeds, there is first an increase in the proportion of di-iodo-tyrosine and finally an increase of thyroxine, as the end stage of synthesis is reached. An attempt has been made to represent this diagrammatically (refer figure 1). The chief 'regulator' of this important synthesis is the *thyrotropic hormone* of the Pituitary. This hormone (which holds the key to thyroid pathology) has the following four important functions represented by corresponding arrows in the diagram (figure 1).

1. It facilitates the uptake of inorganic iodine by the thyroid gland.
2. It accelerates the chain of synthesis of thyroxine.
3. *It produces epithelial hyperplasia of the thyroid acini.*
4. It brings about the release of thyroid hormone into the circulation.

The normal blood iodine level is about 8-10 micro grams % and consists of two fractions:—

- (1) alcohol soluble *inorganic* iodine, which depends on and varies with the dietary iodine.
- (2) alcohol insoluble *organic* iodine which contains the active principle of the thyroid gland, and on the increase in the level of which, depends the manifestation of Thyrotoxicosis. In thyrotoxicosis the blood iodine level exceeds 12 micro grams % and may reach 40 micro grams %. The amelioration of symptoms with treatment causes a fall in the organic iodine. (figure 3).

The Pathogenesis of Simple Goitre:—In addition to its role in thyroxine synthesis, it is most important to realise that the *thyrotropic hormone* causes *epithelial hyperplasia* and *increase in the size of the thyroid gland* (Vide Fig. 1). This epithelial hyperplasia is the key to the pathology of the thyroid. The size of the thyroid is thus conditioned by the secretion of the thyrotropic hormone. The secretion of the thyrotropic hormone is conditioned in turn and regulated by the level of blood thyroxine.

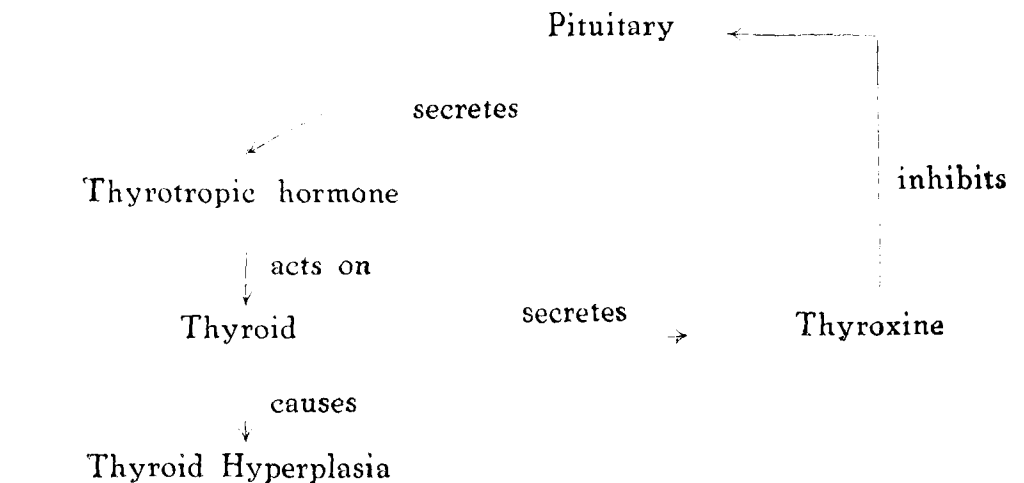


Figure 4.

Diagram showing the hormonal relationships and the cause of thyroid hyperplasia.

A rise in blood thyroxine level would inhibit the discharge of the thyrotropic hormone of the Pituitary while a fall in the level of blood thyroxine would stimulate the Pituitary to secrete the thyrotropic hormone.

Thus any factor that decreases the level of blood thyroxine would, as explained above, result in an excess of thyrotropic hormone which would produce hyperplasia and increase in the size of the thyroid, which is *Simple Goitre*.

So working backwards:—

GOITRE

results from

EPITHELIAL HYPERPLASIA
caused by an excess of

THYROTROPIC HORMONE OF PITUITARY
due to low level of

BLOOD THYROXINE

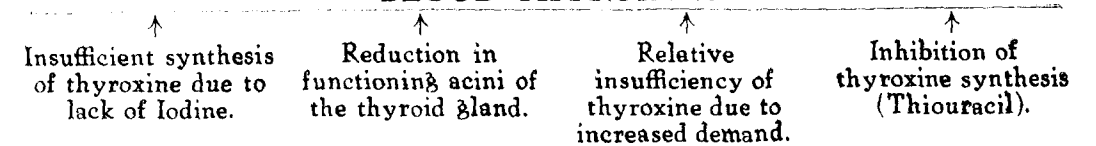


Figure 5.

Diagram showing the Pathogenesis of simple Goitre.

Thus the ultimate cause of all Simple Goitres is a decrease in the level of blood thyroxine and there are many aetiological factors that can cause a diminution in circulating thyroxine (Vide fig. 5):

- (1) Insufficient synthesis of thyroxine due to lack of iodine either as a result of insufficiency in diet or improper absorption due to infection and disease of the intestines.
- (2) Due to reduction in functioning vesicles of the gland (either due to operative removal or disease).
- (3) A relative insufficiency produced by an excessive demand for thyroxine by the tissues as in fever, infection, puberty, pregnancy, lactation etc.
- (4) Due to inhibition of synthesis as produced by the thiouracil group of drugs.

Thyrotoxicosis:—While in Simple Goitre one has only to reckon with, an increase in the size of the thyroid gland with minimal hormonal changes, in Thyrotoxicosis, wide-spread and dramatic endocrinal manifestations arrest the attention, and relegate any enlargement of thyroid to secondary importance.

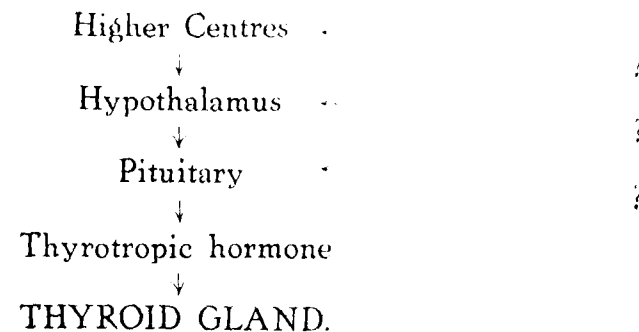


Figure 6.

Chain of influences to the Thyroid Gland.

The normal functioning of the thyroid gland depends on a relay of influences to the gland from the hypothalamus. (refer fig. 6). *Thyrotoxicosis is an aberration somewhere in the link between the hypothalamus and the thyroid*, caused by, "Stress and Strain existence" of present century. It manifests itself as hyperplasia of the gland with excessive secretion and release of thyroxine into the circulation.

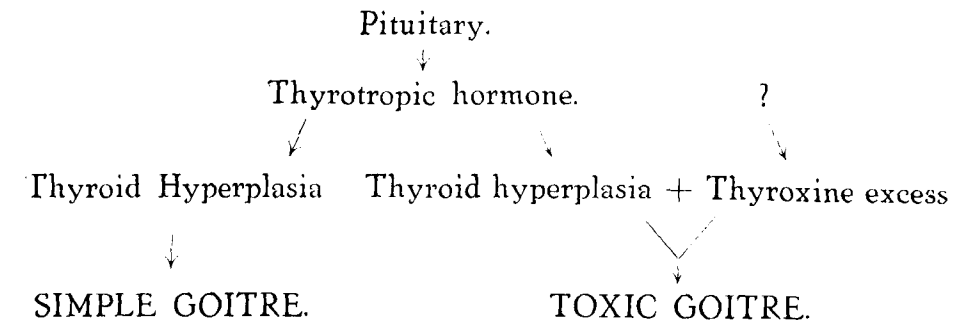


Figure 7.

Diagram showing the difference between Simple and Toxic Goitre, there being some unknown factor in the latter, which results in excess hormone in addition to hyperplasia of Thyroid.

The rational aim of surgery should be to intercept one of the torch-bearers (vide fig. 6) between the hypothalamus and the final recipient tissue, the Thyroid Gland; but this being hardly possible, we are satisfying ourselves by attacking the final recipient tissue—a treatment which is local and destructive and tackles the manifestation rather than the cause of the disease. The treatment of necessity (though perhaps not of choice) is surgical removal of Thyroid.

The history of Thyroid Surgery has undergone revolutionary changes within the last fifty years, and step by step, the work of pioneers has opened the way to safer surgery, so that, what was once a great surgical hazard, has now become a fairly simple procedure. Gone are the days of Crile, who had to devise stealthy and elaborate means to "thieve" the thyroid, for today, one can with a bit of dash and ostentation, make an open onslaught and capture the gland in broad day-light, if *only* he takes cover under the thiouracil group of drugs. *For Thiouracil is the surgeon's ally and not his rival.*

The Action of Thiouracil:—It has already been mentioned that the conversion of di-iodo-tyrosine to thyroxine was by the peroxidase process. (refer fig. 1) It has been proved that thiouracil attacks the thyroid at this point (fig. 1) and inhibits the synthesis of thyroxine from di-iodo-tyrosine. It has no direct neutralising action on thyroxine, nor does it interfere with the uptake of Iodine by the thyroid, thyroxine synthesis being impeded, the level of blood thyroxine is necessarily decreased. This would inevitably result as already discussed (refer fig. 5) in an increased secretion of thyrotropic hormone, producing in its train, thyroid hyperplasia and increase in its size.

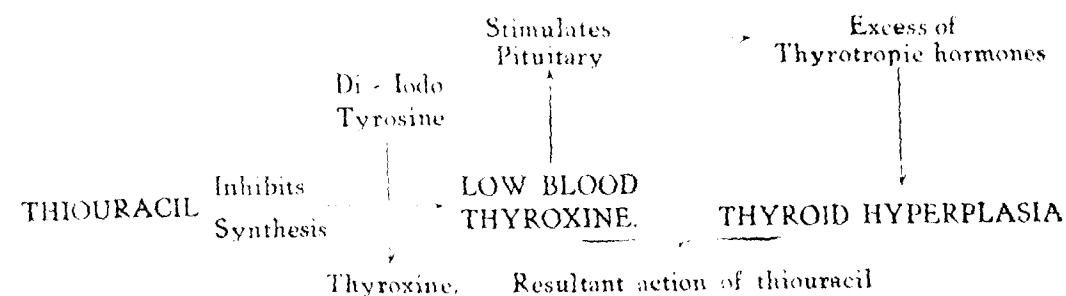


Figure 8.

Diagram showing the action of thiouracil and how its resultant action is inhibition of thyroxine synthesis and increase in size of the thyroid.

Thus as a result of thiouracil therapy, there would be an inhibition of thyroxine synthesis and hyperplasia and increase in the size and vascularity of the thyroid gland. So in thyrotoxicosis the B. M. R. would fall back to normal and the patient is made safe for surgery.

But the increase in size and vascularity are still a matter of concern and anxiety for the cautious operator, who would naturally be keen, that his knife should not draw more blood than necessary. It is here that iodine steps into the gap and the discovery of its function in thyrotoxicosis was the first mile-stone in the history of thyroid surgery.

Mode of Action of Iodine:—While it was Plummer in 1923 that first introduced Iodine on a Scientific basis, (Thiouracil came only in 1943), it was Trousseau who was the first to use it in a case of hyperthyroidism, some fifty years earlier. Confronted with a young attractive lady suffering from toxic goitre, engrossed with the idea that iodine was contraindicated, he inadvertently, in forgetfulness, prescribed iodine instead of the customary dose of digitalis. The lady returned a fortnight later, much better (when he discovered what he then thought was a mistake) and substituted digitalis for Iodine. The next fortnight only saw her worse—and thus iodine by accident got associated with thyrotoxicosis.

It is perhaps a paradox that iodine, which is a cure for simple goitre should also find a place in the treatment of thyrotoxicosis, for before the meteoric (I was almost about to say, upstart) rise of thiouracil in 1943, iodine played a lone and valiant hand in the battle against hyperthyroidism.

The action of Iodine in Thyrotoxicosis may be said to be:—

- (1) *It inhibits or at least slows the release of the thyroid hormone into the circulation.*
- (2) *It produces involution of the gland.*

Thus iodine ‘constipates’ the Thyroid. *It converts a gland of active discharge to one of storage.* Under Iodine therapy the Thyroid hormone is synthesised normally, but is prevented from entering the circulation. It is retained within the thyroid gland, where it distends the thyroid acini and causes pressure atrophy of the secretory cells. In addition, iodine involutes the gland. The benefit produced by iodine in thyrotoxicosis is thus easily explained and its action contrasts with the action of thiouracil which strikes at the root and inhibits the synthesis of thyroxine. But like everything else in this ephemeral world, the action of iodine is only transitory, and soon it passes into ineffectual lethargy and impotence. Hyper-thyroidism reasserts itself and thyroxine which is too dynamic a hormone, crosses the iodine barrier and the thyroid has to await “slaughter”, by the surgeon.

So the modern therapy for thyrotoxicosis embodies all the historic advances made. The B.M.R. of the patient is brought down to normal by controlled administration of thiouracil. This is followed by iodine (some surgeons prefer to give it concurrently with thiouracil in the last week) to bring about involution, decreased vascularity and decreased friability of the gland and with conditions thus made favourable, subtotal thyroidectomy is done.

Conclusion:—We have only glanced superficially over the fundamental principles governing, the pathology of thyroid, the metabolism of iodine, the pathogenesis of Simple and Toxic Goitre and the action of iodine and thiouracil. Only certain aspects of this wide and interesting subject could be touched and if the young reader has been stimulated he can find a wealth of information in specialised treatises on the subject.

It is with honour and pride that I acknowledge help in the preparation of this article from Dr. U. Mohan Rao, M.S., F.R.C.S. who has always been a source of inspiration and guidance to me.

—★—

The sweetest of all sounds is praise.

—Zenophon Hiero.

Post-partum Retinal Arterial Obstruction Associated with Hemiplegia

K. V. KRISHNASWAMI, M.B.B.S.

THE clinical syndrome of blindness and contralateral hemiplegia, as seen in the following case, is so rare that it merits publication.

A multiparous woman of 29 years was admitted for blindness in her left eye and inability to use freely the right upper and lower extremities for the past one year. The illness started eleven days after her last delivery with sudden loss of consciousness which she regained after a few days. Then she found that she was blind in her left eye and was not able to talk. She was also unable to use her right limbs and could not feel anything on the right side of the body. During the course of the next three months she gradually recovered her power of speech and also the partial use of the right limbs, lower extremity to a much greater extent than the right upper extremity. She is still blind in her left eye. During puerperium she did not have any fever nor did she have post-partum haemorrhage as a complication. Her obstetrical history reveals that she had three abortions. On clinical examination:—

A well nourished multiparous woman of 29 years. Not anaemic or cyanosed. No palpable lymph glands including the supra-trochlears.

C. N. S:—Intelligence and memory for recent and past events good. Speech normal. Patient is right-handed.

Cranial nerves:—There is inequality of pupils, the left being dilated and not reacting to light; but consensual reflex is present. Right sided facial paralysis of upper motor neurone type present. Other cranial nerves are normal.

Motor system:—Power is very much diminished in the muscles of the right upper extremity, weak in the right lower extremity. Normal on the left side. Tone-spasticity present in the right upper extremity. There is wasting of the muscles of right hand and forearm (disuse atrophy). No fibrillations or involuntary movements seen. Co-ordination normal on both sides.

Sensations:—In the right upper limb there is deficient appreciation of touch, tactile localisation and discrimination being lost. Normal in other parts of the body.

Reflexes:—All the tendon reflexes are exaggerated on the right side, more marked in the upper extremity. The superficial abdominal reflexes on the right side are lost. The plantar response is extensor on the right side. Visceral reflexes normal.

Other systems:—Nothing abnormal diagnosed.

Investigation:—Blood Pressure: 114/70.

Blood for W. R. and Kahn: Negative.

X'ray skull—Nil abnormal.

C. S. F.: Proteins—40 mgms.

Globulin—nil.

Chlorides—700 mgms.

Sugar—49.5 mgms.

No cells.

W. R. 0.1. Negative.

0.5. Negative.

Fundoscopy:—The left optic disc is chalk white and atrophic. Margins clear. Arteries attenuated and empty. Veins narrowed.

The right eye normal.

DISCUSSION

The concomitant occurrence of blindness in one eye and contralateral hemiplegia is too dramatic to be coincidental and it seems reasonable to look for some lesion which would involve both the central retinal artery and arterial supply to motor cortex. The occurrence of blockage of central retinal artery during or following pregnancy has been recorded in several publications (Minton 1939), (Stewart 1936); but the combination of such

a blockage with contralateral hemiplegia must be very rare (Thompson 1940). Soeremen attributed such a combination of events to thrombosis of internal carotid artery—a condition called carotid hemiplegia. Occlusion of internal carotid artery is generally fatal. Death occurs within one or two weeks, usually without recovery of consciousness. In the rare cases in which consciousness is regained there is blindness of the ipsilateral eye, contralateral hemiplegia, hemianesthesia and hemianopia.

A brief summary of the anatomy of the internal carotid and middle cerebral arteries.

The internal carotid arteries enter the skull just internal to the posterior clinoid processes of the pituitary fossa and give off the ophthalmic arteries, small twigs to pituitary gland and then divide into middle and anterior cerebral arteries. The middle cerebral artery supplies most of the convexity of the cerebral hemisphere, including motor, sensory and speech areas of the cortex. It gives off the perforating arteries, lenticulo—striate and lenticulo-optic arteries supplying the corpus striatum, optic thalamus and region of internal capsule. Then it runs along the Sylvian fissure supplying the whole of the convexity of cerebral hemisphere with the exception of the area supplied by anterior cerebral artery which includes the cortical areas for leg and foot at the top of the pre-central gyrus, and at the occipital pole of the hemisphere anastomoses over the cortical area for central vision with posterior cerebral artery.

In the present case, the sudden onset, the course of the illness and a gradual recovery leaving behind residual paralysis and blindness are suggestive of vascular thrombosis being the pathological lesion. As for the aetiological factor, syphilis is not likely to be the cause in the presence of a negative blood and C.S.F. W. R. and other normal C.S.F. findings. Further, pregnancy is supposed to have a 'therapeutic' effect on syphilis in the sense that neurosyphilis is less likely to occur. Martin, and Shuhan, and Symonds have made it clear that primary thrombosis of cerebral veins and dural sinuses may occur after delivery without any cause and that well defined clinical picture results. The exact cause of such a primary thrombosis is not clear. It is not as a rule associated with excessive loss of blood, with toxæmia or with clinical or postmortem evidence of infection and in most instances there is no evidence of phlebitis (King 1950). May it be that primary thrombosis occurs in cerebral arteries also due to the same unknown cause? Possibly the slight clotting tendency which the blood exhibits during pregnancy may play a role (King 1950). According to some authors a few bacteria may be carried by blood stream to cerebral vessels and set up a thrombosis which despite its bacterial origin does not set up an abscess.

The fact that this woman has recovered her speech and power in her right lower extremity shows that there is re-establishment of blood supply through the circle of Willis. The blindness is apt to be permanent. The retinal nerve cells have a power of recovery equal to that of cerebral nerve cells and so the vascular obstruction must be more complete in central retinal artery than in middle cerebral artery for the blindness to be complete and permanent (Thompson 1940).

Similar cases to the present one have been recorded in literature. Meltzer mentioned the case of a woman, aged 32 in whom right hemiplegia with aphasia developed 10 days after delivery and thrombosis of left middle cerebral artery was observed at autopsy. Thompson's case was a 33 year old woman who on the seventh day after post-partum haemorrhage exhibited right hemiplegia with thrombosis of central retinal artery in the left eye. Von Hosslin and Apers and Palmer mentioned a number of similar types. Thus it is obvious that post-partum retinal arterial obstruction with contralateral hemiplegia is a rare but a definite clinical entity.

I am much indebted to my chief Dr. B. H. P. Pai, M.D., for kindly permitting me to report this case and for his valuable advice.

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—★—
The Easiest Way to Resist Temptation is Publicly!

—Franklin P. Jones.

★ ★ ★
Live your own life, for you will die your own death.

—Old Latin Proverb.

Skiagram of skull:

1. Sella turcica was enlarged and depressed at the expense of the sphenoidal air sinuses.
2. Anterior clinoid processes were destroyed with Calcified areas near the ant. clinoid process.
3. Posterior clinoid processes were also elevated and destroyed.

Mandible: Rt. and Lt. A. P. and Lat. Views Normal.

Skiagram of the joints revealed incomplete union of epiphyses though his age is 21.

Differential Diagnosis:

The following possibilities should be kept in mind in cases of stunted growth and infantile Sex-Character.

I. Simple Dwarfism: (Only somatic growth stunted).

(a) Hereditary (Racial and Familial factor).

(b) Developmental Skeletal Disease.

Achondroplasia
Chondro - osteo - dystrophy
Osteogenesis imperfecta.

(c) Acquired skeletal diseases.

Rickets.
Spinal Caries.
Spinal deformities from causes like anterior poliomyelitis.

II. Dwarfism associated with Infantilism:

(Somatic and Sexual growth both limited).

(a) Endocrines.

Hypothyroid — Cretinism and Juvenile myxoedema

Hypopituitary — Frohlich's Syndrome.

Laurence-Moon-Biedl, Syndrome Progeria

Hypogonadal — Eunuchoid Infantilism.

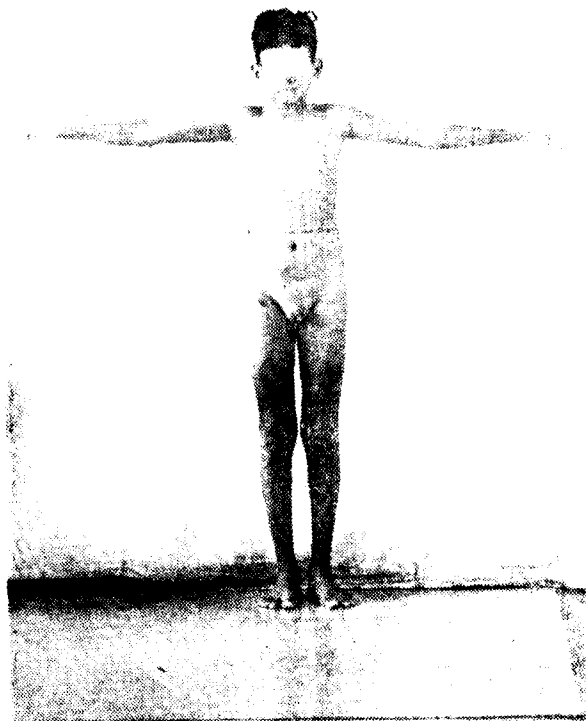
? Hypoadrenal — Dwarfism } Infant Hercules Type
Short Little Women.

Thymic. —

IN MEMORIAM



Mr. M. C. M. REDDY.



To indicate proportionate dwarfism and genital underdevelopment.

Skiagram - Elbow



To show non-union of epiphysis.

Skiagram - Skull



Enlargement or widening of pituitary fossa with

(b) *Metabolic.*

Diabetes Mellitus.
Von-Gierkes disease.

(c) *Systemic Diseases.*

Renal	— Renal rickets and renal infantilism, congenital cystic kidney.
Enteral	— Coeliac disease.
Cardiac	— Congenital morbus cordis. Acquired mitral stenosis.
Hepatic	— Cirrhosis of liver.
Cerebral	— Microcephaly Post meningitic.
Pulmonary	— Chronic Tuberculosis. Bronchiectasis.

(d) *Infectious:*

Congenital Syphilis.
Tuberculosis.
Malaria.
Hookworm.

(e) *Miscellaneous:*

Vitamin Deficiencies.
Toxic Infantilism (alcohol, lead poisoning).
Pre-maturity.

DISCUSSIONS:

This case presents the following features:—

- A. (1) Patient is perfectly formed, but somatic growth is much below the normal, usual standard.
- (2) Primary and secondary sex characters show incomplete development at puberty. Genital organs are infantile in character, secondary sex characters are absent.
- (3) Epiphyses are open without union, so ultimate height is well below the normal.
- (4) Intellectual development is normal though emotions and behaviours are of immature character.
- (5) Lowered B. M. R. low type sugar tolerance are in favour of a hypo-hormonal condition.

- B. (i) Raised intra-cranial tension is indicated by the presence of headache, vomiting and temporal pallor of the optic discs.
- (ii) Skiagram of skull reveals the presence of a tumour in the region of the pituitary as shown by the destruction of sella tursica and its expansion at the expense of the sphenoidal air-sinus.
- (iii) Calcified spots indicate degenerative process in the tumour and later attempts at calcification.

The patient manifests no evidence of :

Skeletal deformity,
Systemic disease, or
familial or racial pre-dispositions.

So under these conditions it is thought that the infantilism is likely to be hormonal in origin—hypo-hormonal—as indicated by low B.M.R. and low type of glucose tolerance curve. Insulin tolerance test and ketosteroid assay were not done due to lack of facilities.

In conclusion the pathognomonic features associated with infantilism presented by the case are :

- (1) Defective development of primary and secondary sexual characteristics.
- (2) Normal intellectual development with immature behaviour pattern.
- (3) Lack of union of epiphyses.
- (4) Widening of the sella tursica.

Thereby indicating hypo-pituitarism, resulting from a space expanding tumour of the pituitary region.

The variety of syndromes which result from such a pathological process are :

- (1) Frohlich's syndrome.
- (2) Laurence Moon-Biedl Syndrome.
- (3) Dercums syndrome.
- (4) Lorain syndrome.

The first three syndromes are characterised by adiposity, mental torpor, retinal changes and familial tendencies—whereas the features above mentioned in this case are met with only in Lorain syndrome.

The various pathological processes which give rise to such a disorder are :

- (1) Chromophobe adenoma—with pressure atrophy of acidophilic growth stimulating hormonal cells and basophilic gonad stimulating hormonal cells.
- (2) Craniopharyngiomas.
- (3) Tumours of the third ventricle.
- (4) Carcinomata of pituitary.

Carcinomata (adenocarcinomata) are rare, rapidly growing, result in greater destruction and extension with involvement of neighbouring structures.

Craniopharyngiomas, arising from remnants of the primitive duct from Rathke's pouch, generally appear early in life, attain larger size than adenomas. Degenerative changes are common in this. Symptoms of hypopituitarism and hypothalamic syndrome (obesity, sleeplessness, polyurea) are both combined as the pressure of the tumour is both upwards and downwards.

The chromophobe adenomas arising from chromophobes of anterior lobe interfere with the acidophilic cells retarding growth, also interfere with basophilic cells which result in sexual infantilism.

These tumours are slow growing and symptoms may become prominent in prepubertal period or at puberty.

In this case Chromophobe adenoma is likely to be the nature of tumour.

PROGNOSIS.

If there were no tumour, the prognosis is fair as the changes of further growth are good. In cases of pituitary tumour, the prognosis is less favourable, depending on radio-sensitivity and operability of the tumour. In this case as tumour increases the pressure symptoms on neighbouring structures will get aggravated. (Blindness of vision, hypothalamic syndrome and hydrocephalus)

The younger the patient and the slighter the growth deficiency, the better are the prospects for growth. Adults with epiphyses still open do not respond so well to endocrine therapy mainly because the cells at the epiphyses are less responsive to pituitary stimulation.

We thank Lt.-Col. C. K. PRASADA RAO, for his kind permission to report this case.

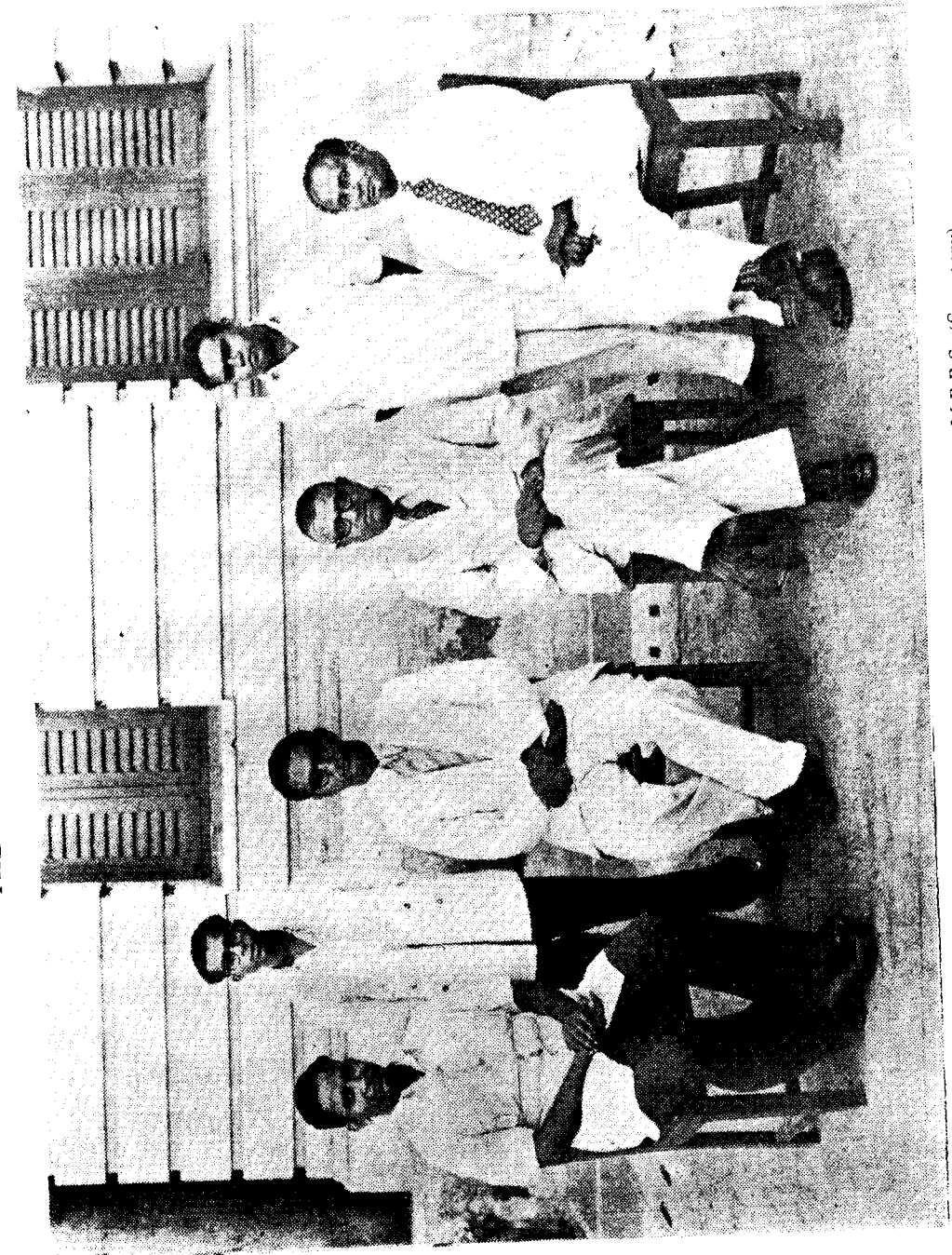
Solitude

When the world around me is sunk in noise,
 When in fleeting joys, people rejoice,
 When fortune at me does smile and frown,
 I'd love to leave the busy town ;
 To seek a place tranquil and calm,
 To rid the mind, of the day's alarm,
 To sit alone, and be left to think,
 Of unborn sorrows my life to link,
 Of the 'dear ones' all, dead and gone,
 Of others too, yet unborn !

Here shall come, my thoughts free,
 Here Nature's bloom, my eyes shall see !
 Here a bird shall sing an unknown song,
 And I'll sit alone, the whole day long ;
 And now as I gaze at a wild flower,
 I'll behold before me unknown power :
 And now my Life, confined within narrow spheres,
 Shall break its bounds, beyond doubts and fears,
 For with the very music, the birds'd raise
 I'd sing one song in my Creator's praise !

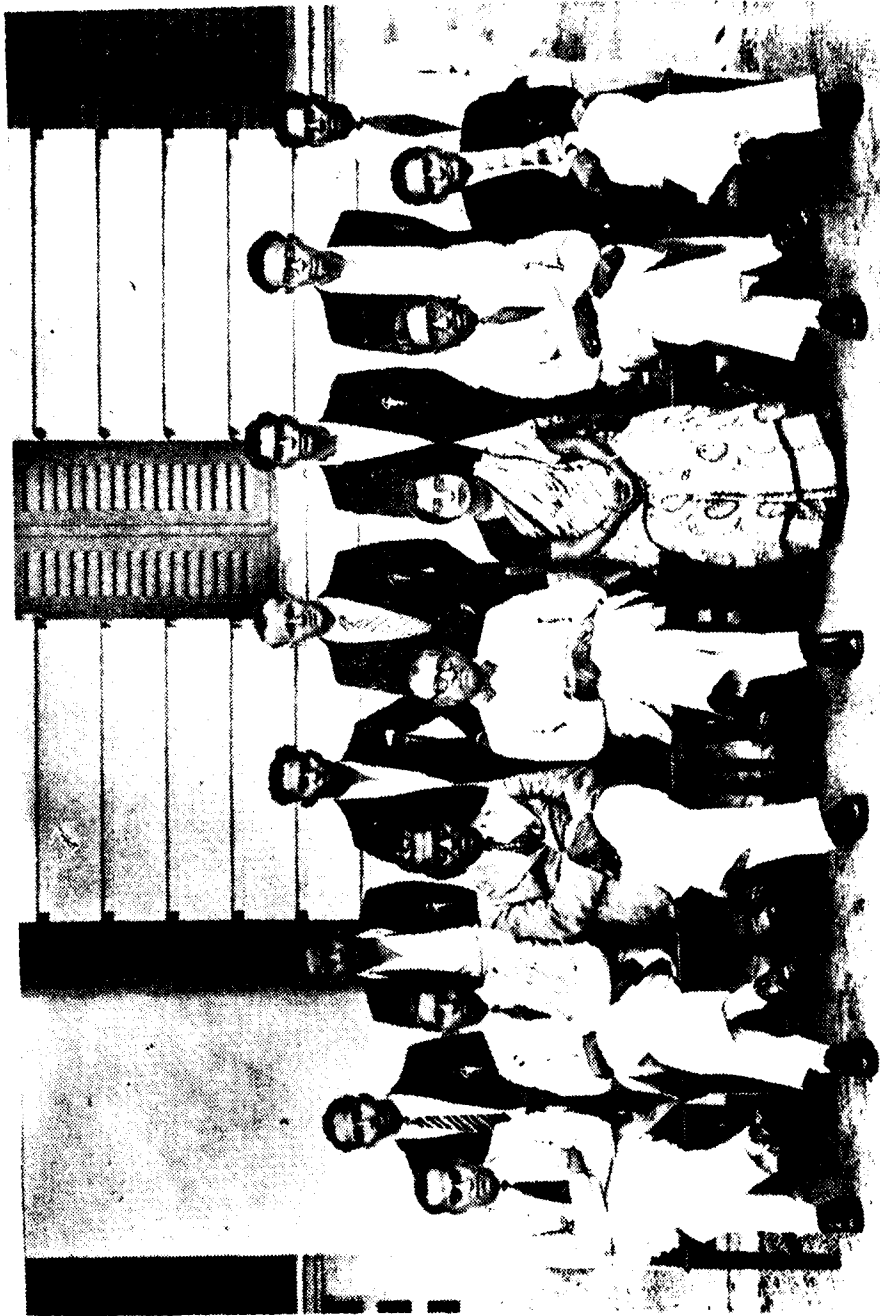
ASGHAR ALI,
 III Year.

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 Dr. R. V. Rajam, M.S., M.R.C.P. (President),
 Mr. K. K. Mohmed (Student Director).

Standing :—
 Dr. M. M. Cooper, M.B.B.S. (Secretary),
 Dr. G. N. Roberts, M.B.B.S., M.Sc. (Vice-President),
 Mr. Ulloor P. Krishnamoorthy (General Secretary & Ex-Officio Director).



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Sitting—

Gynaecomastia in a case of Hypernephroma

G. K. GNANAMURTHI,
V Year.

AN interesting case of Gynaecomastia who was under the care of Dr. P. Ratnaswamy and Lt.-Col. C. K. P. Menon is reported to show the numerous difficulties which confronted me in the diagnosis of the cause of this condition.

This patient, Mottiah by name, aged 32 years was admitted into the Hospital, for pain in the left hypochondrium and prominence of both breasts, of 20 days duration.

History of Present Illness:—The complaint started 20 days prior to admission with pain in the back at the left lumbar region accompanied by a swelling in the left hypochondrium. Simultaneously he also noticed the prominence of his breasts.

Condition on Admission:—A well nourished individual, looking otherwise normal except for the enlargement of both breasts.

Physical Examination revealed:—A circumscribed elongated mass palpable in the left hypochondrium simulating splenic enlargement. The mass had the following characteristics:

1. It extended to 4 fingers breadth, below the costal margin,
2. It had a definite edge,
3. It had a grossly nodular surface,
4. It extended posteriorly to some extent into the lumbar region,
5. It was tender,
- and 6. It was dull on percussion.

Liver and Spleen:—Were not palpable.

Other Systems:—Nil particular. Testicles normal.

Laboratory Investigations:

Urine: Alkaline; Sp. Gr. 1020; Alb. nil; Sugar-nil.
 Blood: R. B. C. 3.9 million/c.mm. Hb. 70%.
 W. B. C. 5,000/c.m. P3. L21. M2. E1.
 Blood: Cholesterol: 129 mgm. % Sugar: 75 mgm. %

Possibilities were suggested from the above findings.

1. Enlarged spleen.
2. Abscess of the left lobe of the liver.
3. Adrenal tumour with Gynaecomastia.

The first two conditions do not cause Gynaecomastia. Moreover this swelling extended into the lumbar region posteriorly. This does not occur in a splenic enlargement or abscess of the left lobe of the liver. So a provisional diagnosis of Adrenal Tumour was made and further investigation done:

A plain skiagram of the chest, showed extensive secondary deposits in both lung-fields.

The outline of the left kidney was hazy and not well visualized, on intravenous pyelography.

The patient expired before surgical intervention could be done. The post-mortem examination report was as follows:

1. Patient had Bilateral Gynaecomastia. Sectioning showed adenomatous hyperplasia (True Gynaecomastia); no fat or fibrous tissue. No secondaries were seen in the breast as this can resemble gynaecomastia.
2. Extensive secondary deposits were seen in the liver and lungs.
3. Left kidney was incorporated in a large tumour with extensive adhesions to surrounding tissues and organs. Left Adrenal was adherent and stretched over the mass. The spleen also was adherent.

On sectioning, the tumour was seen to arise from the kidney on its medial aspect growing into the cortex. Section presented a variegated appearance with yellowish and haemorrhagic areas; Blood vessels of pelvis and calyces not infiltrated, clearly confirming the absence of deformity of the calyces in the I. V. Pyelogram.

Post-mortem examination appearances were suggestive of a carcinoma of the renal tubules—Grawitz's Tumour.

Correlating the physical findings with the post-mortem report one is still at a loss to explain the cause of gynaecomastia unless we postulate that it has no connection to the abdominal tumour. Enumerating the causes of true gynaecomastia, it is still difficult to attribute this condition to any particular cause.

The Causes:

- (i) *Excess of oestrogen in circulation.*

Stilboesterol Treatment,
 Cirrhosis of Liver,
 Tumours of Testicle,
 Tumours of Supra-renal cortex.

- (ii) *Androgen Lack.*

Testicular Atrophy,
 Klinefeller Rufstein and Albright's Syndrome,
 Pre-pubertal castration.

- (iii) *Miscellaneous.*

Repeated trauma to breasts,
 Prolonged starvation,
 Methyl testosterone medication.

A surmise is therefore made in this case that the Gynaecomastia may be due to suprarenal hyperactivity, from a Grawitz's Tumour of the kidney causing an irritation hyperplasia of the Adrenal cortex.

I am immensely thankful to Dr. P. Ratnaswamy for permitting me to publish this article and also to Dr. K. Ramachandra, Asst. to Dr. P. Ratnaswamy, for the trouble he took to complete the report of the case.

SCIENCE

"Do not believe in what ye have heard; do not believe in traditions because they have been handed down for many generations; do not believe in anything because it is rumoured and spoken of by many;do not believe in that as truth to which you have become attached by habit; do not believe merely on the authority of your teachers and elders; ...after observation and analysis, when it agrees with reason and is conducive to the good and benefit to one and all, then accept it and live up to it".

—BUDDHA.

★ *Crime is momentary mania—said Dostovsky.
It is the revolt against oppression and
poverty—said Victor Hugo. You be the Judge.*

The Accused

ANONYMOUS.

THOSE were hectic days, packed with tension—throughout the length and breadth of the country, the masses were in revolt, for the creation of a better life. But my own attitude towards these struggles for existence of the common people, was one of contempt and scorn, because I belonged to a social group, which never struggled but still existed.

.... A mammoth meeting was in progress. Facing the humming sea of humanity was arrayed, the khaki-clad pillars of the state, ready for action. As minutes passed, excitement was mounting high, because a clash was expected.

At last the storm broke. The solid mass of men and women was shattered into myriads of tiny, frightened creatures, dashing here and there. In the general rounding up that followed, incidentally I too was arrested, though, I was only a disinterested spectator.

.... I thought I was alone in that cell. It was completely dark around me. Soon I heard a groan from one corner.

He was a middle aged man, with rough coarse hair and unshaved face squatting on a bundle of straw mattress; he started staring at me with an air of hostility. The room was dingy and stinking and the corners were dark. I wanted to get rid of the fearful thoughts coming up in my mind and the only way to do that was to become friendly with my 'Room-mate' and start a conversation. But what to talk? Then I noticed something on his neck.

I asked him—"For how many years have you been in this prison?" He was still intensely gazing at me and said "I don't know. It doesn't matter". He was in no mood for chatting. But I continued:—"what is that scar on your neck?" At this he changed his gaze from me and turned towards the granite wall of the room. He seemed to be in a contemplative mood. But at last he told me his story, a poignant story, the story of a 'murderer'—as he was described by law—a story which gave me a passing glimpse into the realities of a world which till that time didn't exist for me—the world of the poor.

I will try to reproduce the narration in his own words. But still my pen is not powerful enough to depict the transient, fleeting flashes of varied emotions expressed on his face, from time to time.

He said—"You were asking about this mark on my neck? Well, you must be patient to hear me. When you feel sleepy, tell me. I will make a mat for you from part of this straw. To-night, you won't get anything, not even water to drink. That is the rule, they say. Only in the morning, the superintendent will come for inspection and then he will sanction everything for you. But, it doesn't matter, you can share my meal".

"I come from a village nearby. It is a good place but quite small. There is one shop there, owned by the Janmi. And there is a small railway station, where the big trains don't stop, but others halt there for a few minutes. Near the station there is a tea shop. All the articles which we villagers need, we could get there itself. The Janmi is very rich and he owns nearly half the land in that village. They say he gave nearly thousand rupees for some Government fund. Whenever any congress leader passes that way, he spends some time with the landlord. He had a son, of my own age.

My father died in a car-accident while I was four years of age. I don't remember his face well. I never used to ask about him to my mother, because she always wept when any mention was made of him. One day, mother hugged me close to her breast and told me "Do you know, that Janmi's son and yourself were born on the same day? One day you will also be like him, my son". And she kissed me on my forehead. Because father died, my mother had to do all the work for our living. She was employed in the landlord's house for doing out-door work, cleaning vessels, sweeping, washing clothes etc., and she used to get her pay part as rice and part in cash.

I studied in the local elementary school and passed my 4th class. If I wanted to study more, I have to go to the nearby harbour, where

there is a high school. But mother said, we couldn't afford it, and so at the age of 10 I left the school.

One day the landlord, a fat burly fellow, called me and said—"You are keeping quiet at home, aren't you? If you want, you can come and work on my fields. At the end of the month, I will give you something, but don't expect too much. After all you are only a chokra".

Early next morning, before sun rise, I proceeded to the field. The dew was slowly melting and settling down as tiny pearls at the tips of the shining grass leaves. The ground was fresh and wide and emanating the sweet smell of moist earth, and I was elated. From dawn to dusk I tilled the soil, sincerely, wholeheartedly, because, I loved the land and my work.

In the first 2 or 3 months, I was given ten rupees. But later on I was not given anything in cash but the landlord told me that I will be given the noon meal, every day. I was satisfied with his proposal. And like this I worked for 10 years in his fields. You see, in these years many things happened . . . " Here, his eyes twinkled, and his lips parted in a smile—"There was a girl working in the same field. She was . . ." From a distance outside, we heard the sound of approaching heavy boots, crushing the gravel underneath. It came and halted in front of our cell. The door flew open and an armed constable came in. My old friend, pulled out an earthenware pot from under the straw mattress and held it out. Some "Kanji" and two or three bits of boiled tapioca were put into it. All the while, the sentry was scrutinizing me with a devilish grin on his face. We were silent, till he left and till we could no longer hear the thumping boots.

My old friend insisted that I must share with him his meagre diet, and in spite of my protests, I had to yield, so as not to offend him. We finished our 'supper' in silence.

He continued—"Where did I leave the story? Oh yes—About Neelu—for that was her name. She was not beautiful but when she smiled it was a sight to see. She was so kind to me. I began to like her immensely. After my work in the field, we used to sit together and talk till it was quite dark.

One day mother remarked "Tell me the truth, son? I am seeing some change in you. You don't come and sit near me and talk as you used to do. Do you think, you are too much grown up? Come on, tell me". I had to yield. By the end of the month Neelu and myself got married.

I told you I was working in our landlord's field for 10 years. One evening Neelu called me and told me that she wanted a green blouse piece—of silk—which she could wear on occasions. I thought for a while "Neelu is my wife and I have to give her what she wants. But where is the money? yes, it is not a problem. My landlord hasn't given me any cash for nearly 10 years. Surely, he will give me if I tell him that it is for my Neelu". So I said to her—"Of course I will get you the blouse piece. And you know, you will look very nice in that new silk". She turned her face away because she was still a shy little thing.

I searched my bundle, picked out one shirt which my master's son had given me some time back. It was torn at the shoulder but mother stitched it for me. Wearing that, I proceeded to his house and entered through the back gate, because we were not allowed to go through the front door. The young master's room is facing the back entrance.

"Well', Why at this unusual hour?"

I answered—"I would like to go to the harbour, to buy something".

The landlord got up from his chair—"You see, you have plenty of work to do. How can you leave these things and go off like that?.. Anyhow, you can go this time but come back very soon, eh?"

"Yes, master. It is so kind of you. But I have no money. If you will be good enough . . ."

At this, his son moved to me and said aloud.

"Oho! since when have you started asking money? We haven't got to give you any wages".

"But master, for the last 10 years, you haven't given me any cash as wages. Of course, you were kind enough to give me afternoon meals . . . But my Neelu wants to buy something, I want only five rupees".

"You dirty swine, you are eating our food, and have grown double my size and you have the guts to say that we didn't give you wages. That shirt you are wearing costs more than five rupees. Now don't start argueing. Get out."

I knew, the talk was of no avail. But how could I go and tell this to my Neelu? I was just like a faithful dog kicked on its head by

its master. But a dog has at least the right to bark, provided it doesn't bite. But what about me? I felt so powerless against those two beings, who fattened their purse year by year on the sweat of men like me. I was awakened from my reverie by the shouting of the landlord.

"You young rascal, what are you thinking about? I told you to quit".

I removed my shirt, threw it on his face and ran out. I didn't want to go home till I made enough money, to meet the desires of my wife. That night, I spent outside in the open air, I had heard that in the harbour (10 miles off), they were taking workers. By dawn I started walking, with the courage and recklessness of a desperate man and I reached the harbour by noon. The harbour workers were on strike for increase of wages and new hands were being recruited. Though my conscience didn't permit me to join the army of black-legs my tummy forced me to do so. When the strike was called off, the ring-leaders were sacked and so I got my employment confirmed. I used to save a little every month and by the end of a year, I had hundred rupees in solid cash in my pocket.

I started for home, on a few days leave. The local passenger reached my village at noon. Proudly, I got down and I thought I will take some tea in the tea shop. The manager was known to me. He commented on my prosperous looks. But I wanted to go home early and so put my hand into my pocket for the purse. It was not there. I searched over and over. Yes, I had lost it. Someone had picked my pocket. The result of one year's hard labour was lost. You can better imagine my feelings. I came home desperately. There was an awful silence about the place. My mother was sitting inside, brooding. As soon as she saw me she got up and ran to me, and embraced me, first time after my marriage. She could not speak anything; her tears spoke volumes. I asked where Neelu was.

"You see, the landlord's son told me, that I am getting old and that I am useless for work. He wanted me to send Neelu to work in his house. So for the last one year, she is working there". I began to feel something fishy. Some morbid thoughts flashed across my mind. No. It can't be. I brushed them aside; took leave of mother and went to the landlord's house".

I could see that at this stage, he was visibly perturbed. He looked straight into my eyes. "When I went there, what do you think I saw? The door of the young master's room flew open and out came both of

them, tired and dishevelled. They saw me at the gate. She gave a shriek, and moved away. My body was hot like a furnace. The young master pretended nonchalance. I sprang on him, grasped his throat, threw him on the ground and sent my knife right through his naked neck. My hands were drenched in his warm gushing blood. I searched for Neelu. She was not there. By that time lot of people had encircled me. I put the knife at my own throat, but it was a failure.

They tried me. For the last time, I saw my mother's weeping face in the court. They gave me life imprisonment. On my second day of prison life, I received a message—my mother had died.

That was the end of the story. There was silence in the room. I broke it. "How many more years you have to be here?"

He answered crisply—"I don't know, I don't care". After a while he turned to me and asked—"Do you think that I am a criminal? And if my Neelu did it because of her poverty, will you accuse her?"

I didn't answer him. The candle was slowly dying out. A small gush of wind entered our cell and suddenly the room was in darkness. The bars of our prison were silhouetted against a calm and beautiful sky outside. As if coming from the wilderness, I could hear, a slowly growing rumbling sound, it approached like a destructive ferocious tempest and again dissolved with dying reverberations into the darkness of the night. It was the sentry going on his rounds.

—★—

WORDS TO LIVE BY

Lord, make me an instrument of thy peace;
Where there is hatred let me sow love;
Where there is doubt, faith,
Where there is despair hope,
Where there is darkness, light,
And where there is sadness, joy.

Mistakes in Diagnosis

Dr. D. S. IYER, M.S., F.R.C.S.

WHY are mistakes made? Because certain factors lead us astray. They are, inertia or ignorance which is in us, simple formulation or methodism which we develop and follow; as an example I might mention that we are prone to put rheumatism as the cause of all vague pains, and influenza, the cause of all short fevers; inadequate physical examination, omission of relevant investigations, and lastly the habit of persisting in the original diagnosis, even though the signs and symptoms do not conform to it; and we take pride in saying "In my opinion it is so".

To a student in Surgery one of the problems that foxes him a lot is the nature and situation of a tumefaction or swelling. Let us take as an example an organ like the testis, thyroid, or breast. Is it possible to decide always that a swelling is present or not? Minor swellings and enlargements are very difficult to assess. Factors like age, sex and physiological activity have to be kept in mind in assessing an enlargement. It is also possible to overlook a swelling when one is present. A swelling in the neck may be masked by excessive fat or well developed muscles. For deciding the where, and what, of a swelling, we first look to its topography or situation. A swelling which therefore lies in the middle of the neck from the level of the thyroid cartilage to the level of the suprasternal notch is to us, a thyroid swelling. We confirm that it is a thyroid swelling, by the fact that the swelling moves with the larynx and trachea during attempts at deglutition. But there is one essential feature in the topography of a thyroid swelling. It is not subcutaneous as it appears to be, but is really submuscular and lies in the visceral compartment of the neck. Again, movement with larynx on deglutition is only a quality that is possible so long as the swelling is within the

capsule of the thyroid. In inflammatory and neoplastic affections, because of extension into the perithyroid space this quality disappears. It is also possible for this quality to be absent when the enlarged portion gets impacted behind the sternum. Even so, in such cases one can elicit a thrill or vibration when an attempt to swallow is made. We must not also forget the fact that the attribute of a thyroid swelling to move on swallowing is due to its attachment to the larynx and trachea and really it is the trachea and larynx that move on deglutition and hence this attribute must also be associated with laryngeal cartilage tumours and swellings of the laryngeal membrane.

In pinning our faith on topography it has to be kept in mind that developmental errors may bring about an abnormal position of a thyroid, testis or kidney. Thus the thyroid may be absent in the neck and present in the tongue, or even in the posterior triangle of the neck. Many errors may be avoided if this is kept in mind. When an enlargement of an organ is found, it may be difficult to decide in certain gross enlargements, whether the enlargement is diffuse and general or localised to one part only. In all diffuse enlargements, the shape of the organ is maintained and what one sees is a magnification of the original. In local enlargements, the shape of the organ is distorted and even if the portion enlarged is great in size and obscures the non-enlarged part, it does not acquire the shape or outline of the real organ. Certain swellings appear to have arisen in the midline, though really arising from structures farther out and being pushed to a midline position by the constant action or pull of muscles which lie over them. Previous treatments can also modify the features of swelling. Administration of Lugol's iodine makes soft or fleshy thyroid feel hard, similarly a swelling treated with irradiation may present different features from the original signs and symptoms.

Another stumbling block is to decide whether a swelling is fluid or solid. We rely on two signs, namely fluctuation and translucency for arriving at a diagnosis. These two are elicited when the size is of sufficient degree, at least of the size of the tip of the thumb. A very tense swelling may feel like solid and a solid swelling composed of material like colloid or myxomatous tissue may feel like fluid. This leads to the error of mistaking fluid for solid and solid for fluid swelling.

In deciding the nature of a swelling, the age of the patient is a very important factor. As an example, hard fibro-adenomas of the breast occur between 15 and 25 years while soft fibro-adenomas between 35 and 40 years while carcinomas after 40 years. The history and what signs or symptoms the patient noticed first must always be enquired into. Pain and tenderness if present from the beginning, suggests an inflammatory

cause or that it is a rapidly growing neoplasm. A very hard lump accidentally noticed in the breast while washing, turns out to be more often a carcinoma than a simple tumour. If there is a simple fullness of the breast it is due to lipoma or fibro-adenoma.

Examination of an organ like the breast should be conducted in very good light. The patient should be examined first in the sitting position with the hands resting on the knees and then in the recumbent position. This simple procedure will bring out many features in the shape, size, presence or absence of a swelling very clearly. Contour and level of the nipples should be noted as it indicates the position of the swelling in relation to the ducts. Skin changes form a very important feature in affections of the breast particularly malignant neoplasms. The skin may be ulcerated in inflammatory affections, in fungation of a malignant growth and in pressure necrosis of a large benign tumour. But in the last condition the tumour is not adherent to skin and there is always a demonstrable cleavage between the capsule of the tumour and the skin. A swelling in the breast usually distorts its outline, but if the breast is fatty and pendulous, a swelling not larger than a cherry will be submerged in the massive breast and will not alter its contour. In such cases the breast flattens on recumbency and the change in contour will be made noticeable. The actual size of a swelling also varies with the size of the breast. Puckering of the skin is due to contraction of the fibrous cords which connect the skin to the breast. The skin is red in inflammation or if there is a vascular neoplasm beneath. The presence of dilated veins in the skin is due to hyperaemia of the underlying tissues as from a sarcoma or encephaloid carcinoma. Skin which is like orange skin or has the peau-de-orange appearance, is the result of lymphatic obstruction. One of the conditions that produce it, is carcinoma; it can occur also in conditions like filariasis or where the lymphatics have been extensively destroyed.

Similarly retraction of the nipple does not mean that there is a carcinoma beneath. It is of recent origin in carcinoma, but is old and long standing in fibrosis from an old abscess, or when the gland has failed to evolve. Palpation to be adequate, the patient must lie down. The practice of palpation with the patient standing or sitting cannot be adequate. Pain and warmth can be elicited if there is increased hyperaemia. Swellings which are not circumscribed or infiltrating tend to disappear when palpated with the flat of the hand. Cysts are elastic to the feel, solid tumours inelastic and scirrhus tumours stony hard. Inflammatory lesions may cause adhesion of the breast to skin, but only neoplasms cause their adhesion to both skin and deep muscles.

Transillumination and plain skiagram of a swelling is a very useful investigation in difficult swellings and should not be omitted. Cysts produce a circular outline and calcification in a swelling excludes a malignant lesion, like carcinoma or sarcoma of a soft tissue. If the swelling is small and the organ in which it lies is very large, only exploration can bring out the nature of the swelling.

In classifying swellings, divide them into two groups: swellings with an acute onset and of short duration and chronic swellings of long duration. Acute swellings may again be localised or diffuse. Localised acute swellings are pyogenic in origin and is an abscess or inflamed lymph node. Diffuse swellings are the result of a spreading infection like cellulitis, lymphangitis. Such a lesion is very dangerous in certain situations like the face and neck and require early diagnosis and energetic treatment. Acute swellings beneath the muscular plane are mainly due to breaking down lymph nodes. In this connection one should not forget that in tuberculosis the site of disease may be far away from the position of an abscess and it may not show any evidence of any inflammation where the abscess lies.

A common cause of multi-nodular matted swelling is tuberculous lymphadenitis. It is often difficult to differentiate between a tuberculous lymph node enlargement, a Hodgkin's disease lymph node and a malignant lymph node. A malignant lymph node is more often secondary than primary. The hidden sources of primary neoplasms should be excluded before calling an enlarged lymph node as a primary sarcoma. In conclusion an enormous chance exists to go wrong and make mistakes in diagnosis. But with the proper understanding of many of the difficulties there is less chance for us in making more mistakes than it would otherwise be.

—★—

Capt. Dr. Davidson David, M.S.

IT came to us as a great shock indeed to hear about the sad and untimely death of Dr. Davidson David at Kashmir last month. He was sent there as a surgical specialist and was beginning to reap the reward of his many years' labours when the great tragedy overtook him. It all happened quick. During the course of his routine duty, he complained of abdominal discomfort and took to bed. In a few hours, pain was excruciating, abdomen became very rigid, and surgical aid could not be rushed in time to save his life. An army colleague of his, from Kashmir who narrated this said that the rapidity of his death, added to their helpless state completely upset them for days.

We, who were more fortunate to have had his good company when he was a colleague in the Anatomy Dept., will always cherish the memory of his keen sense of humour, the ready wit and more than all the cosmopolitan outlook that characterised his actions and endeared him to all. It seems as though it was only the other day that we gave a party to him on the eve of his joining the army. Beaming with happiness—that was the last we saw of him—he was telling us that even in distant Kashmir he would remember us. Alas! The turn of events!—We are to remember him in his distant Kashmir.

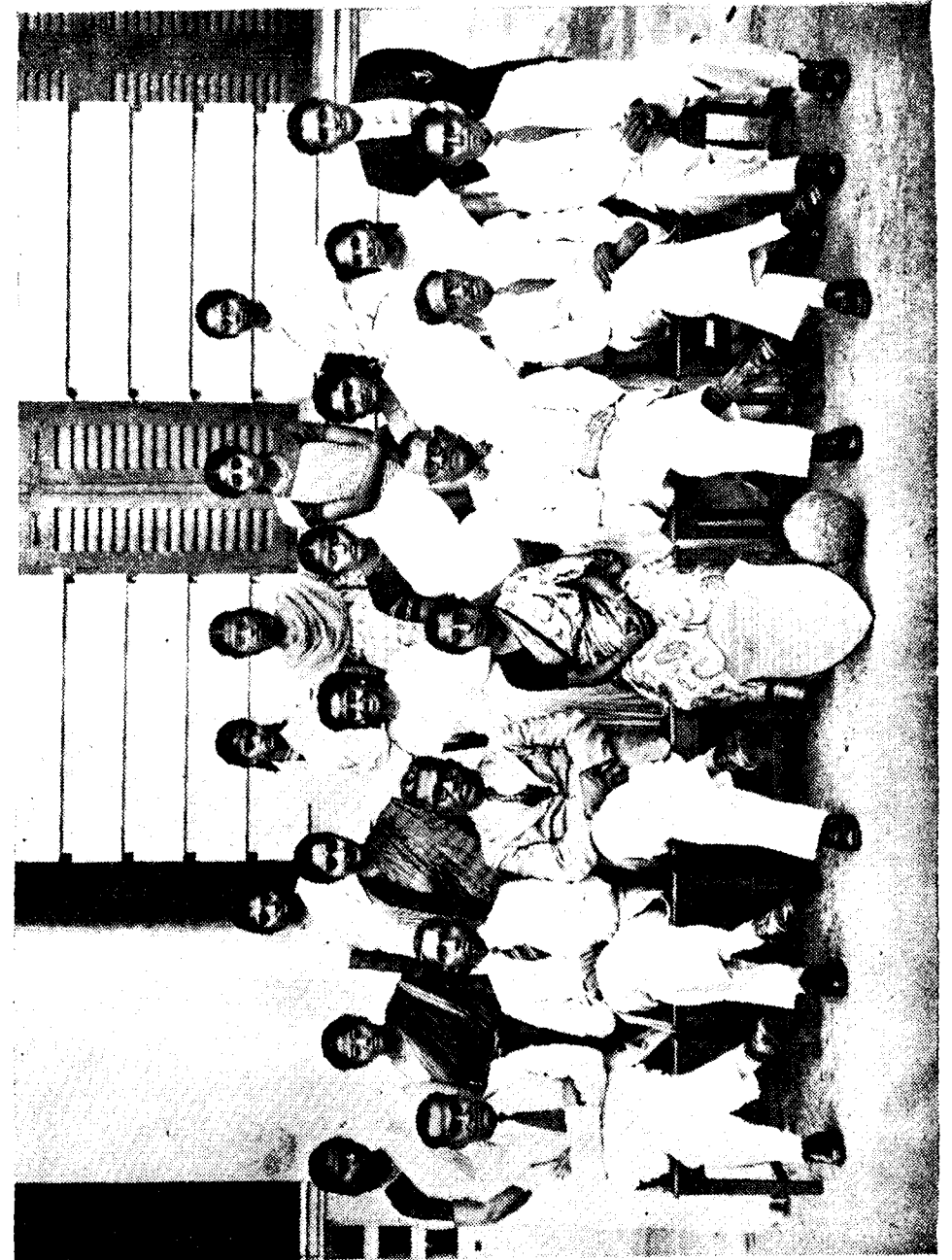
Personally I had shared with him many of his confidences and many were his desires to be fulfilled. Brooding over them all, it is a great pity that fate had been very unkind to him.

Thus had he died very young, as a bachelor and in harness May his soul rest in peace.

"Blessed are those that die young".

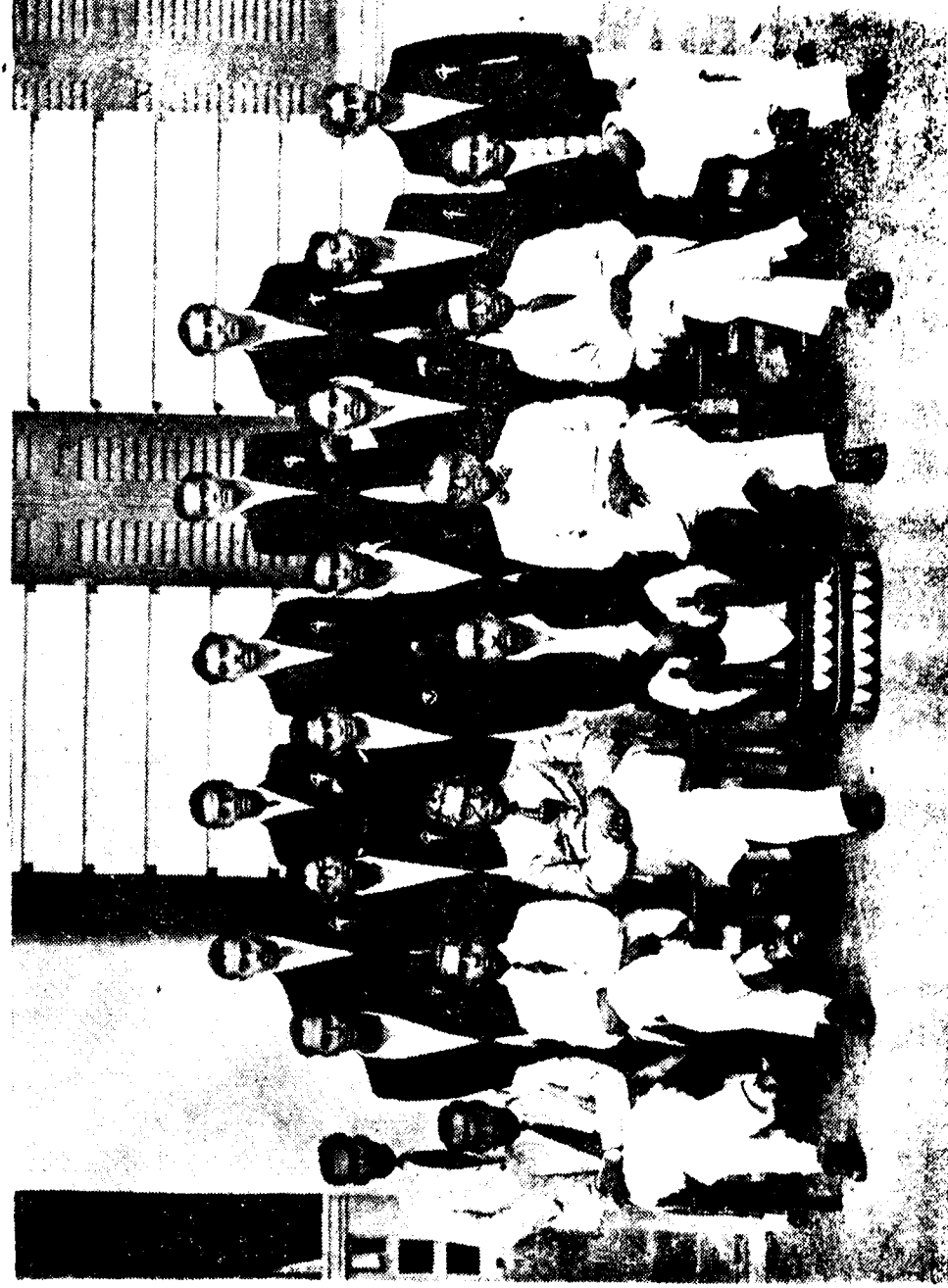
—Dr. KAMESWARAN, M.B.B.S.

The M. M. C. Throw-Ball Team—1949-'50.



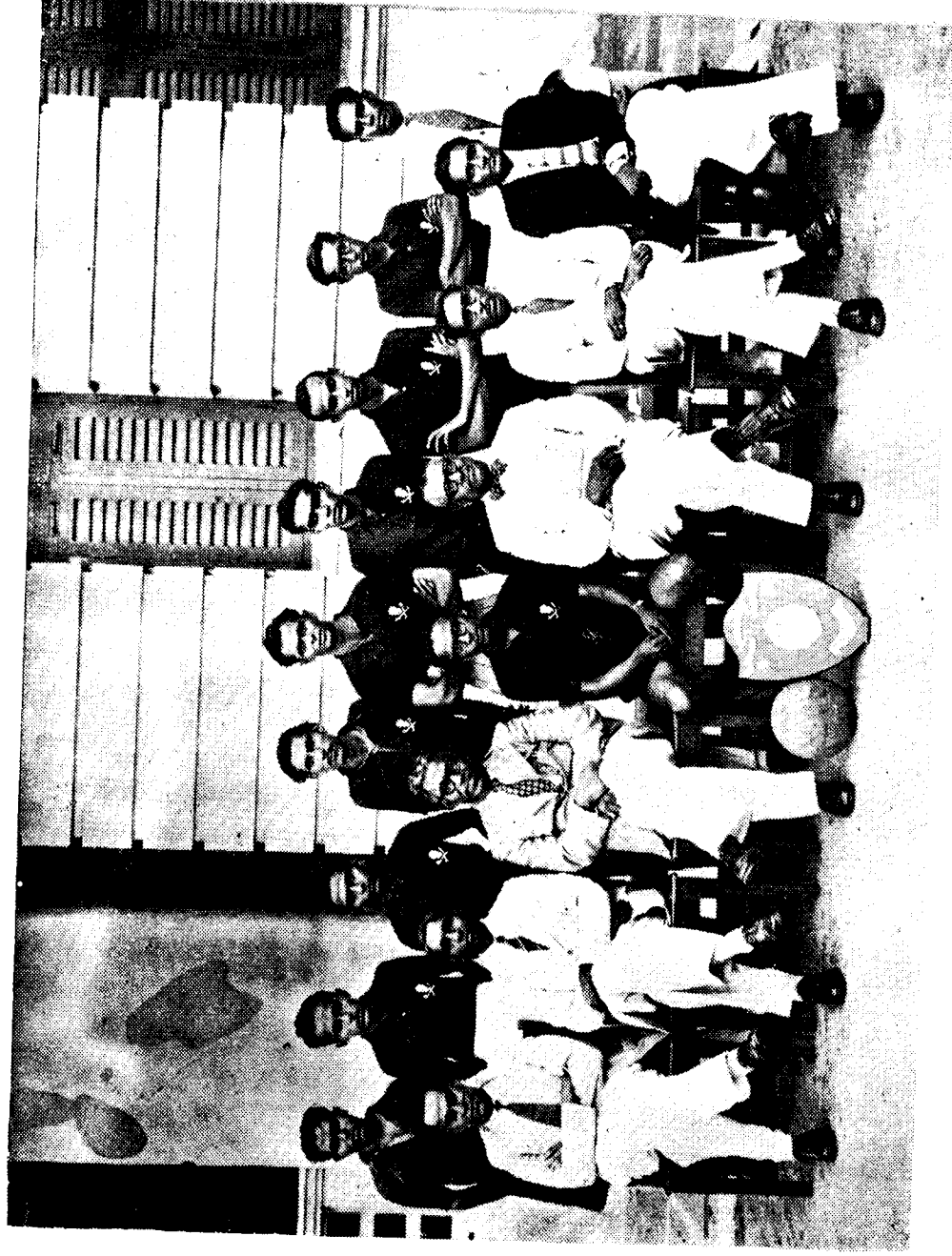
Women's Inter Collegiate Throw-Ball Champions.

The M. M. C. Cricket Team—1949 - '50.



Inter Collegiate League Champions.

The M. M. C. Basket-Ball Team—1949-'50.



Inter Collegiate League Champions.

The M. M. C. Cricket Team—1949 - '50.

The M. M. C. Foot-Ball Team—1949-'50.



Inter Collesiate League Champions.

Miscellany

—YELLOW PRESS.

SOMETIMES one wishes to throw things at others. Here it is us seeking that line of amusement.

Lots of things happen nowadays. Whoever thought that beauty competitions would gain entry here after invading Bombay, as the 'Blitz' beauty competition, to threaten us now in our very midst?

It was 1 P.M. on a certain historic day at the ladies' hostel. A crowd had gathered to elect the beauty queen. There was the warden herself to select the Venus. The fat and the lean, the high and the low paraded to and fro. Excitement ran high. People ate cups and saucers, some dialled '99', it was terrific. The result? Two misses 1950!! Don't ask me who they are. Ask your girl friend!

Every morning we look up at the new nurse's quarters rising inch by inch. Here is a bit of cheery news that comes all the way from green Bengal. The editorial in the Bengal Medical College Magazine tell us of the shadow falling on their college from the sky scraper of a Nurse's Quarters. There too, the medicoes do not have a proper Hostel, for the Government is poor—very poor! The Oliver Twists all over are asking—for more!

On 9th August, 1950, an august personage Dr. Cherian gave a stirring address on the merits of selfless service, flashing patriotism and the proud privilege we have of serving our Free India. We are suitably stirred. The ladies were exhorted to grow in the shadow and follow in the footsteps of that doyen among doyens, that pearl among ambassadors Srimati Vijayalakshmi Pandit.

55297, does that number mean anything to you? The men's hostel got a phone at last. Statistics now show that maximum calls are made between 9 and 10 at night. But from the other hostel comes the report that 3710 rings more often at night than it used to, before. That gives a clue. 2 plus 2 makes four.

A certain Dr. Schmidt of Berlin, a very learned minerologist has propounded a theory that the amniotic fluid of the male embryo is tinged green and that of the female embryo is tinted blue. We do not know if it has anything to do with the colouring of our buses. The girls say that green is the color of envy and jealousy and greed and what not.

What are little boys made of?
Of snails and shells and puppy dog's tails!
What are little girls made of?
Of sugar and spice and all that is nice!

On August 22nd a young and handsome doctor addressed our New Graduates. He handed out the usual dope, but we still like him—do we, Dr. Brand. Dr. Parvathi Devi asked people to be up and doing. The tea, well, well, well. The entertainment was fun what with farces—failing mikes and winking lights—what day?

We cannot end without a reference to the food problem. It puzzles one to read: Plant more trees, trees mean rain, rain means water. water means food. Food means Freedom from Foreign bread.

To us trees mean monkeys — ?

—★—
The surgeon is he who hath inside information

The good doctor may mend thee, the bad end thee

Of all the professions verily, medicine must be the most difficult to master, for the most learned physicians, I know, are still practising.

★ ★ ★

A Useful Prescription:

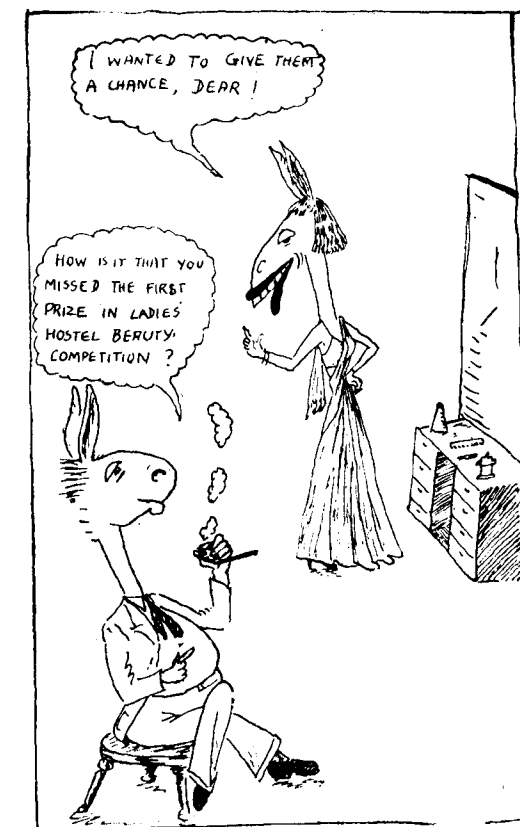
Take equal parts of kindness unselfishness and artfulness; mix in an atmosphere of love. Add a minim of usefulness; scatter a few grains of cheerfulness; colour with smiles; stir with hearty laugh. And dispense to every body.

—Anonymous.

THE ASSOCIATION



President Willie appealed to the students to Co-operate with him for the uplift of the Association.



Memsahib on Beauty Competition.

A Visit to The Teddington Chemical Factory

G. R. SUNDARARAJAN, B.Sc.,
IV Year.

IN response to an invitation from the Teddington Chemical Factory to the Professor of Pharmacology, Madras Medical College, about thirty of us, students mostly belonging to the fourth year, visited their premises at Virungambakkam, situated about three miles from Kodambakkam railway station on a Wednesday afternoon in July.

Proteolysed Oral Liver is prepared there by a process, an outline of which is given below. The chief chemist of the factory showed us round the place and explained to us the various stages in the preparation, from the start to the finish.

A brief outline of the process is as follows:

Fatty layers are removed from the healthy fresh livers of sheep and goats and minced in an electric mincing machine. These are then treated with acidulated water at a pH. 5.5. The mass is digested for a few hours in the presence of enzyme Papain at a slightly elevated temperature after which the enzyme is destroyed by raising the temperature of the mass. The clear filtrate obtained by first passing through cloth and then through filter paper is adjusted to a pH. of 6.8 with the help of a Beckman Ph meter (an interesting instrument to study) and filtered again, the filtrate is then concentrated in vacuo in Scott's Distillation Plant or in a glass distillation plant if it is desired ultimately to make an injectable preparation. The syrupy concentrate is painted on trays and dried in Scott's or 'Apex' Vacuum drying ovens. The dried powder, which is very hygroscopic is scrapped off from the trays in a humidity controlled

room where the humidity is below 45%. The bottling of the dried liver powder is also done in the same room by a trained staff.

We are very grateful for this kind invitation from the management of the factory and we thank them for giving us an opportunity to see how Proteolysed Oral Liver is prepared. We are thankful to the staff of the laboratory for showing us round.

You grow up the day you have your first real
laugh.....at yourself.

—Ethel Barrymore.

Manners are like the cipher in arithmetic, they may
not be much in themselves, but they are capable of
adding a great deal to the value of everything else.

Nothing is happiness which is not shared by
atleast one other and nothing is truly sorrow unless
it is borne absolutely alone.

Tact is the knack of making a point without
making an enemy.

I can resist everything except temptation.

—Oscar Wilde.

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Indications: Bronchial & Cardiac Asthma.

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Indications: Tropical Macrocytic Anaemia, Pernicious Anaemia, Anaemia of Pregnancy, Secondary Anaemia, after acute infectious diseases, during convalescence caused by Malaria, Allergic forms of Asthma or excessive use of Sulphonamides etc.

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