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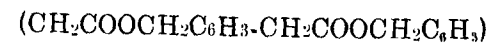
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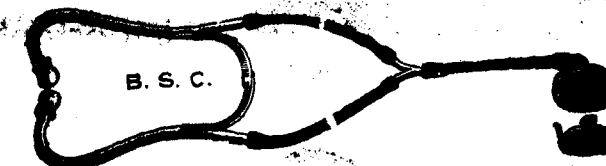


Fig. 6649.—"SURGICO" Phonophore Binaural Stethoscope, chestpiece set at right angles; easily inserted beneath clothing next to the skin. Adjustable to any position; bases of the lungs examined without the patient sitting up; heart examined whilst in prone position; foetal heart examined with pregnant woman lying face downwards; child's chest examined over whole extent sitting behind the child. Folds compactly. Rs. 8-0 complete. Fig. 6649-A. Chestpiece only with protector spare, Rs. 4-8. Fig. 6649-B. Y-union, spare, Re. 0-10.

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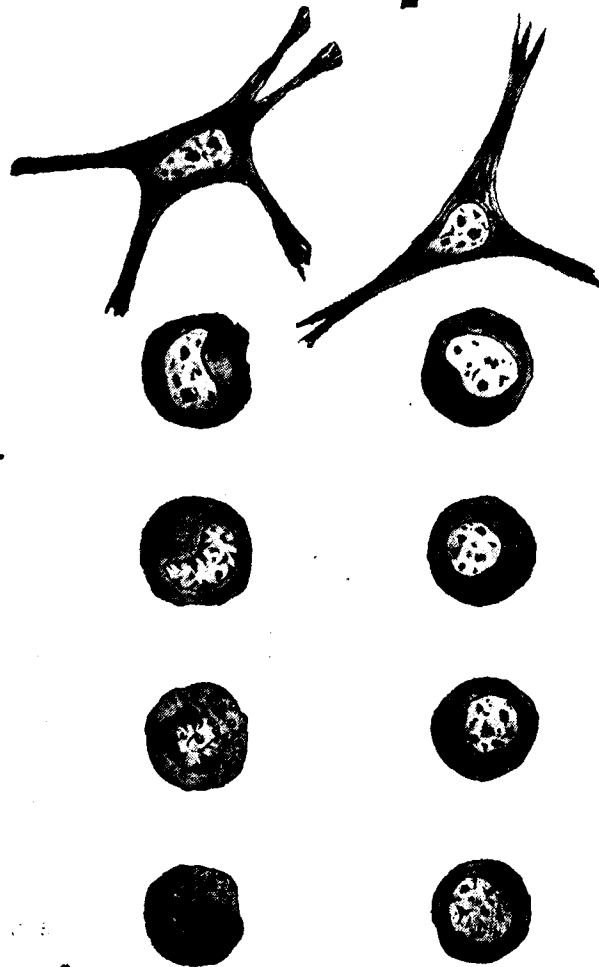
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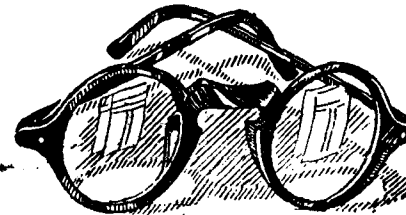
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Vol. XVII, No. 1

SEPTEMBER, 1937.

THE MADRAS MEDICAL COLLEGE MAGAZINE

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THE MADRAS
MEDICAL COLLEGE MAGAZINE.

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Rao Bahadur Dr. A. LAKSHMANASWAMY MUDALIAR,
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**It is the duty of every one to say,
“In what way can I be useful?”.**

“Let us work! Let us strive in the peaceful field of science for the pre-eminence of our several countries. Let us strive, for strife is effort, strife is life, when progress is the goal.... Blessed is he who carries within himself an ideal and who obeys it; ideal of art, ideal of science, ideal of gospel virtues, therein lies the springs of great thoughts and great actions.”

Louis Pasteur.



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The solemn portals a century old,
Grand reputations, history, great name,—
We voice their welcome to all the Freshers.
May be you find dim for light pretence for joy,
Very nature's instincts curbed for sheer want;
But that's how we plod, that's our only way.
Yet we dabble in all! Love, sorrow, marriage,
Burials you witness in our midst:
For thus we go learning life and drugs—
What value is drug lest we value life?
So come! join our merry cry

—'OLD MEDICOES NEVER DIE'

T. K. N.



The Madras Medical College Magazine

VOL. XVII

SEPTEMBER 1937

No. I

Some New Therapeutic Agents

BY J. C. DAVID, M.B.B.S., PH.D.

The number of new remedies manufactured and let loose day after day on an unsuspecting and gullible public is *legion*. If advertisements can be believed, this age is an age of miracles, for affections of the mind, heart and body may be easily got rid off by wearing a particular talisman; conception can be controlled temporarily or permanently, as desired, by a single dose by mouth; and numerous are the shortcuts pointed out for the cure of syphilis and leprosy among other diseases. As if these are not enough wonders, we have claims made by manufacturing chemists from the Antipodes to Budapest for the peculiar excellence of their particular brand of either a well-known medicine or some new fad. What is worse, of all so called civilised countries ours is the happiest hunting ground for charlatans, quacks and other genera and species of 'Medicine Men'!

But the subject for this article is not a discussion of such spurious therapeutic agents. I propose to give examples of some notable advances in recent years in chemotherapy particularly, and of a few other substances

which have stood critical tests and have been accepted by authorities as very useful additions to our therapeutic armamentarium.

The first drug I would like to mention is

Benzedrine.

This is chemically Beta-phenyl-isopropylamine and is similar in structure to ephedrine and adrenaline. Barger and Dale described this drug as early as 1910 but not till 20 years later were its important actions realised.

It has sympathomimetic actions, causing a rise of blood pressure and is astringent to the nasal mucous membrane. While adrenaline causes the same rise of blood pressure on repeated injections, benzedrine produces less marked effects on subsequent injections. It causes relaxation of gastro-intestinal spasm. But its most curious action is on the brain, where it causes a striking mental change involving euphoria, loss of fatigue, heightened intellectual activity, talkativeness, etc. But the

effects are not uniform. In some people mental efficiency is increased while in others irritability, restlessness and inhibition of sleep occur. Other central effects noted are increase in meticulousness, resentfulness, impulsiveness, impatience, anxiety, surliness, increase in self-assertiveness approaching aggressiveness, in some facetiousness, increase in spontaneity, agitation, drowsiness, inability to concentrate, forgetfulness, tactile hallucinations, etc.

The indications for use are:—firstly as a *local astringent*. As an internal medication, it has been best established in the treatment of *Narcolepsy*. It has also been suggested in overcoming persistent states of fatigue and nervous exhaustion; in *Post-encephalitic Parkinsonianism*; in conditions in which it is desirable to produce an elevation of the blood pressure; in relieving gastro-intestinal spasm, in combating overdose with barbiturates; in preparing individuals for periods of excessive physical or mental exertion; as an adjuvant to the action of atropine, stramonium or hyoscyne and in relieving attacks of migraine. These suggestions need further substantiation.

The average dosage is from 10 to 30 mg. per day. The dose may be increased if necessary but 20 mg. usually elicits all the important actions.

The New Insulins.

Recent years have taught that certain unpleasant symptoms resulting from hypoglycaemia form very important factors in the lives of many patients suffering from severe diabetes. Izod Bennett (1937) recalls several such cases. One was a medical man who set out on his morning rounds in a new car and

remembered nothing until he awoke in a London Hospital with a badly cut head, to receive the news that his car had been found smashed to pieces in a quiet suburban road. Another was the case of a bank clerk who had just achieved notoriety by entering the manager's office in the middle of the morning where he smashed the furniture and assaulted his superior. Another bank clerk who had been perfectly controlled with insulin in 1926, consulted Dr. Bennett again in 1932 because he found that on several days in a week he tended, at about 11 A.M., to throw the ledgers about and then retire to sulk in the W. C. for half an hour! In children a condition of profound nervousness, irritability and fear is often noted at times when the effect of a previous dose of insulin is at its maximum.

The new insulins, because of their slower action hold promise of making it easier to reproduce the continuous secretion of natural insulin which we believe to be the physiological condition, and to diminish this risk of frequent hypoglycaemia, mild or severe, so much dreaded.

Protamine Insulin or Insulin Retard was first introduced by Hagedon in Denmark. It is a preparation consisting of a compound of Insulin hydrochloride with a protamine obtained from the sperm of a species of trout. It is to be injected as a colloidal suspension. This suspension is not stable for more than a few weeks and so it is produced by freshly adding an alkaline buffer solution to the protamine insulate solution which is stable for at least 1½ years, so as to adjust the pH to the iso-electric point pH 7.3. The addition of this buffer throws down a precipitate and until this is done the product acts just like ordinary insulin.

Zinc Protamine Insulin is a preparation of insulin modified by the addition of protamine and zinc chloride. Each mil contains 40 units of insulin with 0.3–0.5 mg. of protamine and from 0.08 to 0.1 mg. of zinc with sufficient disodium phosphate to maintain its pH at not more than 7.1 and not less than 7.4. It also contains 1.6 per cent of glycerine to maintain its isotonicity and 0.2 per cent of cresol or 0.25 per cent phenol as a preservative.

While ordinary insulin begins to act in 20 to 40 minutes and the maximum effect is obtained in 3 hours, with insulin retard the action begins in 1 to 3 hours and the maximum effect is got in 6 to 8 hours. With zinc protamine insulin the action begins in 9 to 11 hours and reaches a maximum in 18 to 20 hours.

The slower action is believed to be due to their remaining longer in the subcutaneous tissue where they are slowly broken down and absorbed as ordinary insulin.

The slower acting insulins are not of any use to a person who has been perfectly controlled by ordinary insulin. But where the patient finds the administration of multiple doses a serious burden or when he has been subjected to frequent hypoglycaemic attacks the slower acting insulins may prove to be a boon.

In severe diabetes hyperglycaemia may sometimes develop during sleep and while multiple doses of ordinary insulin control the disease during the day, because of their relatively transient action such doses are insufficient to restrain the disease in the long interval between the evening and morning injections. Such patients for half the 24 hours are virtually cases of untreated

diabetes. The slow insulins control such cases and prevent hyperglycaemia at night. Moreover although these have no immediate action on sudden rises of blood sugar as occur after meals the ultimate effect is a lower postprandial blood sugar level. The slow insulins are of no use in an emergency such as coma. They also sometimes give rise to hypoglycaemic attacks which are not noticed early enough owing to the gradual fall of blood sugar and the symptoms are only recognised when the blood sugar has fallen to a very low level.

Mandelic Acid.

Ketogenic diet in urinary infections was introduced by Clark in 1931. The bacteriostatic agent in ketogenic diet is the B-hydroxybutyric acid, excreted in the urine. But this acid given by mouth is completely oxidised before reaching the urine. It has recently been claimed that Mandelic acid, $C_6H_5 \cdot CHOH \cdot COOH$, when given in doses of 12 grams daily and the urine rendered strongly acid by ammonium chloride, forms an excellent substitute for the more cumbersome ketogenic diet. The sodium salt may be given in preference. Cases have been reported of cases of chronic cystitis of several years' duration which have been cured by this simple treatment. Ordinary pus forming organisms and B. Coli are killed by this treatment.

While at a pH of 5, 0.25 per cent. mandelic acid was bactericidal, at a pH of 5.7 four times that concentration i.e., 1 per cent. was needed to produce the same effect. With routine treatment, ½ to 1 per cent. of mandelic acid was readily obtained in the urine. Almost all the mandelic acid ingested appeared in the urine in 24 hours, the maximal excre-

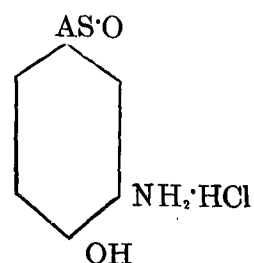
tion being 2 hours after administration. This emphasises the need for repeated dosage of the drug if a proper bactericidal effect is to be maintained. The urine has to be maintained at a pH below 5.5 by giving appropriate doses of ammonium chloride.

Mandelic acid may be given as such but has a very disagreeable taste and not infrequently causes nausea and vomiting. Sodium mandelate is more usually prescribed. The addition of ammonium chloride enhances gastric discomfort and so some workers advise administration of calcium mandelate which is broken down to mandelic acid and calcium chloride. But there is a less pronounced acidifying action than when ammonium mandelate is given. Even with the latter drug the administration of ammonium chloride cannot be completely eliminated.

Mepharside or Mapharsen

Is a trivalent arsenical which is the hydrochloride of the substance frequently referred to as *arsenoxide*. It may be produced from arspenamine by oxidation and may be converted into arspenamine by reduction. It contains 29.02 per cent of arsenic. It is the main product of the breakdown of an arspenamine, to which the spirocheticidal activity is attributed. Mepharside is the active agent itself. It requires no activation in the test tube or the body, and in this respect it differs from arspenamine. Solutions of mepharside are easily made and are relatively stable. Exposure to air and agitation causes no change in its chemical nature or its toxicity. The administration is simple. For clinical use it is supplied mixed with a sufficient amount of alkali and sucrose to make the aqueous solution practically neutral and isotonic with the blood. It is dissolved in 10 c.c. of sterile water and injections are made *quickly* into a vein.

The chemical name is meta-amino-para hydroxy-phenylarsine oxide and the following structural formula has been given to it.



Treatment consists of weekly injections of mepharside for eight weeks followed by eight weeks of treatment with heavy metal. The general plan of treatment is like that with arspenamine. The initial dose is 0.04 G. for man and 0.03 G. for woman. The usual maximum weekly dose may be regarded as being 0.06 G.

Untoward effects frequently observed are nausea, vomiting, lacrimation and pruritus. No death has been so far reported following its use.

In a series of 5,000 cases reported by Gruhitz (1936) serological relapse rate was not more than 15 per cent.

Sulphanilamide.

Domagk studied the action of *Prontosil* which is a related azo compound on mice infected with haemolytic streptococci of human origin. Since then a number of similar compounds have been made which show a remarkable lethal action on the haemolytic streptococcus. It has been suggested that the anti-streptococcal activity of the azo compounds, *prontosil* and *prontosil soluble* is a result of their being reduced *in vivo* or *in vitro* into sulphanilamide or para-amino benzene sulphonamide, which seems to be the active compound. The nature

of the anti-bacterial action of this drug is not yet completely understood. Long and Bliss report that sulphanilamide in dilutions of 1 in 10,000 or more is bacteriostatic *in vitro* for at least some strains of haemolytic streptococci, and to a less degree for some other organisms. Since the therapeutic action is due to the presence of sulphanilamide in the blood the rational method which has yielded good results is the administration of relatively large initial doses followed by smaller doses sufficient to maintain an adequate level of the drug in the blood of the patient over a considerable length of time. Long and Bliss employed during the first 24 hours 5 G. of sulphanilamide, now also called *Prontosil Album*. The usually recommended dose is 0.3 G. of the tablets thrice daily. To ensure against relapse the administration should not be discontinued as soon as the symptoms subside but should be continued for a few days more. *Prontosil soluble* may also be given intramuscularly. Ampoules are available of 5 cc. of 2.5 per cent solution.

Sometimes toxic effects are produced and so caution should be exercised as the drug is not completely evaluated as yet. A variable degree of transient nausea sometimes occurs. Cyanosis and rarely jaundice have been noted. Agranulocytosis has been seen. In patients with impaired renal function the drug is excreted slowly and so poisoning may be caused.

The usefulness of the drug in infections with meningococci, gonococci and certain types of pneumococci have been mentioned. It is not a panacea. Whenever possible bacterial examination must precede its administration so as to prevent disappointment if the infection is not one amenable to this drug.

Mauve Kenny and her colleagues (1937) report uniform success in the treatment of 46 cases of B. Coli infection of the urinary tract 16 of which were cases of pyelitis of pregnancy, the urine becoming free from pus and bacteria and all symptoms being entirely relieved, usually in 3 or 4 days. The only failures have been in infections other than B. Coli. The advantages of the treatment, apart from its rapid and uniform effect, are the relative cheapness of the drug, and the absence of nausea and digestive disturbances often caused by mandelic acid and ammonium chloride, especially in pregnant women. There is some puzzling discrepancy in the results of experiments *in vivo* and *in vitro* indicating probably that the action of sulphanilamide in the body may not be after all directly bactericidal and nothing else. The doses given in this series are 0.5 or 0.6 G. thrice daily for five to seven days orally. There appears to be no need to administer accessory fluid or alkali, as the treatment is clinically effective over a fairly wide range of pH values, 5.2 to 6.8 of the urine.

While the above description gives an account of the use of this drug in acute conditions, Purdie and Fry (1937) describe a case of chronic wound infection due to haemolytic streptococcus, following puerperal sepsis also streptococcal three years previously, where, after various operative procedures and actinotherapy had failed to give relief, oral administration of sulphanilamide in doses of one gram thrice daily (total 94 G.) with local treatment with the same drug (1 per cent solution and dusting) was followed by sterilisation of the wounds within three weeks and complete healing in six weeks.

Succinic acid.

A New remedy for diabetic ketosis. In a paper published in *Dtsch.*

Med. Wschr. July 2nd 1937, Koranyi and Szent-Gyorgi give an account of the new treatment of diabetic ketosis with succinic acid. Only five cases have been so far treated. In one of these as little as one gram daily orally completely removed the ketosis. In another a severe case requiring 70 units of insulin daily, they discontinued the insulin injections and gave instead 10 grammes succinic acid per day orally. By the fourth day while the glycosuria was unaltered the acetone bodies disappeared from the urine. When the use of the acid was stopped for a few days the ketosis recurred. Finally it was possible to reduce the dose of succinic acid to one gramme daily, and by the simultaneous administration of ten units of insulin daily the urine could be kept sugar free—in contrast to 70 units given previously. It is recommended that in a new case a daily dose of ten grammes of succinic acid should be maintained until a couple of days after disappearance of acetonuria, and then it should gradually be reduced. It is given after meals as a 2 per cent. aqueous solution in divided doses. Unfortunately severe nausea is produced owing to its unpleasant taste. So attempts are being made to give it in capsules or as the calcium salt.

Szent-Gyorgi has developed a theory that tissue respiration is catalysed by certain C-dicarboxylic acid of which succinic acid is one. He now claims that the oxidation of pyruvic acid, an intermediary substance in the metabolism of carbohydrates is catalysed by this C₄ acids. According to him if this catalysis fails pyruvic acid is not oxidised but is instead converted into acetone bodies, the failure to catalyse the oxidation being due to a shortage of C₄-dicarboxylic acids in diabetes, either because their forma-

tion is inhibited, or because their destruction is accelerated. Administration of small amounts of C₄ acids such as succinic acid, it is argued, might thus restore catalysis of the pyruvic acid oxidation and so stop the formation of acetone bodies.

Lawrence, in a communication to the *Lancet* (31-7-37), mentions the entirely negative results got by him in two cases with Succinic acid and pleads that it is as yet premature to enthuse over Szent-Gyorgi's claims.

The Drug Treatment of Myasthenia Gravis:—We owe the use of **Ephedrine** in Myasthenia gravis to Dr. Harriet Edgeworth, herself a victim of the disease. She noted an improvement when taking ephedrine for other purposes. Then she took it systematically, the optimum dose being $\frac{3}{4}$ gr. daily. She is now able to live a normal but restricted life.

The explanation of this action is probably found in the work of Orbelli (1923) who using an excised muscle preparation showed that stimulation of the sympathetic nerve endings diminished fatigue, the maximum effect being reached some time after sympathetic stimulation had ceased. It has been shown further by Cannon and Price (1913) that adrenaline diminished muscular fatigue. Ephedrine is like adrenaline but the action is more prolonged. Benefit therefore follows its use in myasthenia gravis owing to its sympathetic stimulator effect.

Glycine was first used in this disease by Thomas *et al* (1932). Boothby and others in the Mayo clinic tried it on eight cases and all showed improvement, but seven of the eight were given ephedrine also. In one patient treated with glycine only marked

improvement resulted. A patient who had been taking ephedrine for a year and whose condition was getting worse improved on glycine. The optimum dose of glycine seemed to be about 20 grams. daily. Ephedrine was given in doses of $\frac{3}{8}$ grain twice a day. Large doses of ephedrine do not cause correspondingly greater improvement and may be distinctly harmful. The daily dose should on no account be more than $1\frac{1}{2}$ grs. Myographic tracings in a case seem to show that with a combination of glycine and ephedrine a better effect is produced. The simultaneous use of both the drugs seems to be therefore desirable. Abderhalden and colleagues (1920) were able to prove that the action of adrenaline in the smooth muscle of the frog was intensified by the addition of an amino acid. Theoretically therefore there is a sound basis for this combination in the treatment of myasthenia gravis. It is also stated that the muscular weakness in this disease is connected with a failure to convert creatine into creatinine for which the presence of an amino acid is necessary. Glycine produces an increase in the output of creatinine and a drop in the excretion of creatine. It is effective therefore even in cases where ephedrine has failed.

Glycine or amino acetic acid is found as white crystals with a sweet taste, soluble in water, 1 in 4 $\frac{1}{2}$. The name **glycine**, though applied in chemistry to this body was also given to another oxyphenyl amino acetic acid and so confusion can be avoided by using the name *Glycocol* instead.

The drawback is the high price of **glycine**. Glycine may however be prescribed in a cheap form as gelatin. Thus a daily dose of 80 g. boiled down into a jelly has proved to be a simple

and inexpensive method of giving glycine.

The abnormal fatiguability in myasthenia gravis has been ascribed, among other theories, to a curare-like poisoning of the motor nerve endings or of the myoneural junction in the affected muscle. **Physostigmine**, a partial antagonist to curare has naturally been tried in this disease. According to the theory of the chemical transmission of nervous impulses, the neuromuscular phenomena associated with this disease indicate a faulty response to nervous impulses associated with failure in equilibrium between the rate of liberation of acetylcholine and the rate of its destruction by the esterase. Bearing in mind that eserine sensitises muscle to acetylcholine, that voluntary muscle is probably stimulated by the mediation of acetylcholine it might be reasonably supposed that in this disease there is some defect in the acetylcholine mechanism. It is possible that there is an insufficient amount produced or that it gets destroyed too quickly owing to an excess of esterase. In this disease doses of $\frac{1}{60}$ gr. **physostigmine** has found application and symptomatic improvement is noticed. But because of side actions *prostigmine* is preferred and is given intramuscularly.

Prostigmine is the dimethyl carbamic ester of 3, oxyphenyl-trimethyl-ammonium methyl sulphate and is analogous to physostigmine. After giving prostigmine there is a drop in serum esterase activity lasting for 4 to 6 hours and this coincides with temporary improvement in myasthenia. This effect is not due to the destruction of the esterase but to its inhibition.

Prostigmine is given by injection in myasthenia, post-operative intestinal

paresis, severe constipation, and in retention of urine, in doses of 1 to 2 cc. each cc. containing 0.5 mg. of the active substance.

Viper Venom.

The venom of the Russell's viper clots haemophilic blood more quickly than any other venom one drop of a 1 in 1000 solution added to 10 drops of haemophilic blood causes clotting in 17 seconds, and a 1 in 100, solution in 60 seconds, the clot being tough and firm. B. W. & Co. have put up **stypven** for topical application in the control of external bleeding. It is issued in rubber capped bottles accompanied by hermetically sealed ampoules of solvent consisting of sterile distilled water with 0.5 per cent phenol. A solution of the necessary concentration is prepared by adding with a syringe the solvent to the rubber stoppered bottle. The solution is stable

only for a limited period, and should not be used after a week.

Hance (1937) records a case where intravenous injection of 0.5 cc. of 1 in 100,000 solution of stypven was used in a desperate and heroic measure to clear postoperative hæmorrhage in a female of 36 years, following hysterectomy for menorrhagia in another case intradermal injection was used. This was a male aged 68, known to be a 'bleeder'. He complained of severe biliary colic. His clotting time was reduced from 9 minutes 20 seconds to 6 minutes 30 seconds by the administration of calcium and hæmoplastin and half an hour before operation 0.5 cc. of a 1 in 10,000 solution of stypven was injected intradermally. A difficult cholecystectomy was done and as the subcutaneous tissue was observed to ooze a further intradermal injection was given. Although the next morning the coagulation time rose no further oozing occurred.

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The Female Sex Hormones and their Uses.

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Of recent times perhaps no subject has received greater attention and importance than the hormones. Vast researches are being carried out throughout the world with such conflicting results that a theory accepted to-day is blown off to-morrow. The hormones are still shrouded in darkness but out of the intensive work done to bring them to light certain convincing facts have emerged. These facts have been utilised with the great advantage in the treatment of menstrual disorders that are so commonly encountered in everyday practice.

That the ovary is an essential factor in the menstrual cycle and that the ovarian influence is of endocrine nature has been known since the work of Knaeur and others (1899). Since that time there has been a continuous discussion not by any means at an end as to the physiologic role played by the various constituent elements of the ovary and especially the Graafian follicles and corpus luteum. Perhaps it would not be out of place to touch upon a few cardinal points regarding normal menstruation. Just after menstruation a considerable group of follicles begins to mature, though as a rule only one during each cycle is destined to reach full maturation, and to ovulate usually at or near the middle of the inter-menstrual period. After the rupture of the follicles the formation of corpus luteum takes place, which continues to grow, and retrogresses shortly before the onset of the next menstrual period.

It is evident then, that there are two ovarian hormones concerned in the

physiology of menstruation—one in the follicle and the other in the corpus luteum. The follicle hormone is termed oestrin, and the corpus luteum hormone is termed progestin or progesterone. Oestrin is demonstrable in both the blood and urine by various tests. It occurs in many different forms of marked degrees of potency and is found not only in the follicle but also in many other body tissues and fluids—placenta, amniotic fluid, urine of pregnancy, etc. Moreover, substances of oestrogenic type are found in many forms of plants and even minerals so that the principle cannot be considered a specific hormone of the follicle. Nor does it represent one substance but a whole group of substances, and in the present state of our knowledge it is better to speak of oestrogenic substances rather than of the oestrogenic hormone. This is particularly true since certain chemicals, which are not hormones such as some of the sterol group are known to be oestrogenic also. In spite of recent work purporting to identify one form of oestrin as characteristic of the follicle, one cannot yet be sure on this point or many others concerning the life history of the oestrogenic principle. R. T. Frank has shown that the oestrogenic factor circulates in increasing concentration in the blood stream until the onset of menstruation with a typical curve of excretion.

After the rupture of the follicle and the formation of corpus luteum, the latter carries on the further production of oestrin so that this principle is present throughout the cycle. As

might be expected however, its amount in blood drops quite suddenly with retrogression of the corpus luteum which begins shortly before the onset of the succeeding period.

In addition to oestrin, the corpus luteum produces another hormone—Progesterone, and this so far as present knowledge is concerned, is not produced by any other tissue. Perhaps it is not so sharply distinct from oestrin as was formerly believed, for recent studies have shown a very close relationship between the two. It seems not unlikely that progesterone is to be looked upon as only a modified oestrin just as the lutein cell is only a modified granulosa cell.

The effects produced by these two hormones are entirely different. Vast experiments have been conducted in the laboratories. The results in places have been contradictory, but all are agreed that oestrin produces an increase in the rhythmic contraction of the uterine musculature. On the endometrium the action of oestrin is characterised by steadily increasing growth and hyperæmia which characterise the endometrium from the end of one period to the beginning of the next. Injections of oestrin into immature rodents have hastened the onset of maturity, and the cornification of the vaginal epithelium in rodents after such injections has become one of the standard tests for the identification of oestrogenic substances. Corpus luteum hormone on the other hand, is in a way antagonistic to oestrin. Progesterone diminishes uterine activity, makes the uterine musculature less sensitive to the posterior pituitary hormone, and it builds up the endometrium to form the pre-menstrual decidua. It brings about the secretory and other changes which characterise the endometrium with the approach of

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the next menstrual period,—changes which are essential for the nidation of the ovum if it happens to be fertilised.

Important as ovarian hormone function is in the menstrual cycle, it is not as fundamental as that of the anterior lobe of the hypophysis, which dominates and makes possible ovarian function, as it does that of the thyroid and adrenal cortex. Two sex hormones are produced by the anterior lobe: one of these, the follicle ripening principle, is responsible for the maturation of graafian follicles and thereby the production of oestrin, the second the lutenising principle, is responsible for the conversion of the thecal and granulosa cells into lutein cells and thereby the production of progesterone. Evidence is accumulating that these two pituitary sex principles are really separate hormones. It has not yet been possible to isolate them, although preparations purporting to contain them in at least an impure form have been available for experimental use.

Finally, there is a third pair of sex principles obtainable from the urine of pregnant women, even in early stages. It is upon the presence of the sex principles that we depend in the Zondek-Ascheim pregnancy test and its various modifications. Since the discovery of the gonad stimulating factor called "Prolan" in pregnancy urine by Zondek and Ascheim, there has been much discussion as to whether the substance is identical with the anterior lobe product, and if identical, whether the hormone found in the placenta, blood and urine is produced by the anterior pituitary, or is also produced by the placenta. Results of a long series of experiments have established conclusively that the substances cannot replace the gonado-tropic principles

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of the anterior pituitary. They are therefore spoken of as the anterior pituitary like gonado-tropic principles of pregnancy urine, or as the prolan substances. They contain two principles—Prolan A, and Prolan B. Prolan A is the follicle ripening, and Prolan B the lutenising factor. The latter at least is now quite generally believed to be not of pituitary, but of trophoblastic origin. While the gonado-tropic hormone extracted from pituitary tissue produces follicle maturation, and corpus luteum formation, in the hypophysectomised rat, the anterior pituitary like hormones of pregnancy urine produces no such reaction in the absence of the hypophysis.

It has been proved by Zondek and confirmed by numerous other investigators that the urine of castrates and of women in the menopause may contain the gonado-tropic principle which Zondek calls "Prolan A" and which has the property of stimulating the graafian follicle without ever transforming it into corpus luteum. It seems necessary at the present time to postulate two hypophysial gonado-tropic hormones, one that stimulates the follicles, and one that lutenises. The so-called "Prolan A" of menopausal urine appears to consist chiefly of the former, whereas the placental hormone in pregnancy urine (Prolan A and B) is more comparable in its biological relation to the lutenising factor.

To summarise therefore, the clinician anxious to practise organo-therapy intelligently, must know the role and significance of the ovarian hormones, the two pituitary sex hormones and the two anterior pituitary like gonado-tropic principles (Prolan A and B) of pregnancy urine. Furthermore, he should know enough about the commercial preparations

which he employs to be familiar with their hormone content and he should select preparations made by manufacturers in whom he has confidence. The other great essential factor for intelligent organo-therapy is to know something of the nature of the endocrine disturbance involved in the functional disturbance which he is so often called upon to treat. Along many lines our knowledge is meagre and incomplete, but enough has been learned to enable us to distinguish the rational from the unsound in our attempts at treatment.

Before entering into the various uses of the hormones, perhaps it would not be out of place to point out some of the various commercial preparations and their contained hormones. "Oestrin" is the principle which the clinician utilises when he administers commercial products such as Progynon, Progynon B, Theelin or Amniotin. Another oestrogenic principle "Emmenin" prepared from the placenta by the method of Collipp, has been less extensively used. "Progesterone" on the other hand is the active principle of such commercial preparations as "Proluton", "Cor-lutin", "Lipolutin", etc. The sex principles of the anterior pituitary are alleged to be contained in at least an impure form in such preparations as Aututrin of Parke Davis & Co. "Gynantrin" of Searle & Co., and "Pre-physin" of Chappel; the hormones in the pregnancy urine are the active principles of "Aututrin S" (Parke Davis & Co.), "Folleutin" (Squibb & Co.), "Antophysin" (Winthrop & Co.). It is not proposed here to enter in detail into the various pathological conditions met with due to endocrine dysfunction, but the attempt is only to present some of the clinical pathology for which hormone therapy may be tried with advantage.

Amenorrhœa: — Endocrinopathic amenorrhœa and hypomenorrhœa are perhaps the most interesting of all the different types of amenorrhœa. Its mechanism is varied and on this variations are based certain clinical syndromes presented by the patients, placing them under different categories. It is customary to speak of a *hypogonadal* and *hypopituitary* type while thyroid hyperfunction and less commonly thyroid hypofunction may likewise be of casual importance. It should be recognised however, that these terms are not based on any exact knowledge of the nature of the relationship implied.

In the so called hypogonadal type endocrine defect is believed to involve chiefly and perhaps only, the ovary. The urine in such cases shows an abundance of anterior pituitary hormones and absence of œstrin. The prototype of this variety is the normal amenorrhœa after the menopause, or though not so physiologic, that seen after the complete removal of the ovarian tissue. The endocrinopathic amenorrhœa for which the most satisfactory scientific evidence is available is that due to anterior pituitary deficiency—the *hypopituitary* type. This type of amenorrhœa is commonly associated with adiposity, sometimes moderate, at other times quite marked. This type is represented by the clinical picture of Frohlich's syndrome. It was originally described by Frohlich in association with a pituitary tumour, but is now accepted as occurring also with purely functional pituitary deficiency. Functional disturbance of the thyroid may also be likewise characterised by amenorrhœa or hypomenorrhœa as one of the symptoms. This is more frequently the case with hyperfunction than with hypofunction. There are, however, numerous excep-

tions to these statements, thus confusing the exact nature of the thyroid influence on menstruation. Regardless of these factors however, thyroid administrations by mouth has been found effective in some of the cases.

In the treatment of the hypopituitary type, it would seem rational to employ the preparations of the pituitary sex hormones themselves; but experience with the preparations available has not been impressive to justify the statement that they are of much value. Collipp has shown that the oral administration of pituitary substances are only potent in doses two or three times as great as those required for hypodermic injection. These results contradict those of Engle and Smith and other investigators, so that the status of the question is still unsettled. The employment of the gonado-tropic principles in pregnancy urine has always been without success since the action of these substances on the human ovary does not seem at all comparable to their effect upon the ovaries of certain laboratory animals.

Since the gonadal hypofunction in such cases is purely secondary to the pituitary disorder, the use of ovarian hormone is obviously purely substitutional. By giving large amounts of œstrogenic substances (Theelin, Amniotin, Progynon B) 10,000 to 20,000 international units daily or every other day for 6—10 doses, bleeding may, in some cases, occur usually quite a number of days after the last injection. This, however, is not always the case by any means and even when it does occur, the bleeding must be interpreted as due to retrogressive changes in an endometrium which has been artificially built up by the endocrine treatment. Moreover such treatment leaves the ovaries un-

touched, ovulation is not stimulated, and since there is no impetus to ovarian mechanism there is no reason to expect a regular recurrence of the bleeding, as in normal menstruation. For such reasons as these, ovarian therapy has been a disappointment in the treatment of amenorrhœa. Yet its trial is justified in certain cases, as, where the psychic effect upon the patient producing even a spurious menstruation is an important consideration. In this connection the physician can often fulfil a most important function, by explaining the innocuousness of amenorrhœa in itself, for there is no subject upon which wrong ideas are more prevalent than this.

What has been said above, applies to the hypogonadal type also. Recently, however, Kauffmann has shown how menstruation can be produced by the continued use of œstrin and progesterone. The administration of Progynon B for 5—6 doses followed by Proluton 5—6 doses has in some cases produced typical menstruation. Despite all the work done, the treatment of endocrinopathic amenorrhœa is still disappointing.

Sterility.—A not inconsiderable group of cases of sterility are explainable on an endocrine basis. But unfortunately little is known as to the endocrine factors involved. In some, the sterility is associated with amenorrhœa, so that the treatment is the same as for amenorrhœa. Where there is deficiency of thyroid, thyroid therapy is indicated. This is the most favourable group. Another group of endocrinopathic sterility is represented by those patients in whom ovulation does not occur even though menstruation is quite or nearly normal. These "an-ovulatory" cycles occur most frequently in very young women or those

approaching middle life. Their age incidence is identical with that of Metropathia Hæmorrhagica which is also associated with an-ovulation and sterility. Little is known as to the endocrine factor connected with an-ovulation, and hence, the treatment is also disappointing. The active principles of pregnancy urine (Antutrin S) have been given a fair trial, and few report good results. The inevitable thyroid may also be given as a part of the treatment.

Primary Dysmenorrhœa.—This is one of the commonest of distressing menstrual disorders. After the raging controversy on the causation of menstrual pain, things have come to a sort of standstill when it was agreed that the pain is due to the disordered uterine contractions, though there is no doubt, that many of the cases are psychogenic. Many patients are improved by suggestion, by general and hygienic measures, but there still remain a large group of patients in whom none of these factors are demonstrable and who seem intractable to treatment. In some of these cases there is reason to believe that the cause is endocrine in nature. Reynolds and others have shown that œstrin is responsible for the rhythmic contractions of the uterus, while repeated stimulation with œstrin makes the uterus refractile. Progesterone, on the other hand, inhibits uterine motility as also the lutenising principles—the prolans of pregnancy urine. On this basis therefore, many authorities have extensively used Proluton and Antutrin S and reported beneficial results. The usual plan is to give daily intramuscular injections of 1 rat unit of progesterone or 100—200 rat units of one of the pregnancy urine preparations beginning usually three or four days before the menstrual period, and continuing

until the flow is well established, when in typical cases, there is spontaneous cessation of pain. It should be added that an exactly opposite plan has been advocated by some (Kennedy and others) oestrogenic principles being used instead of those mentioned above. They argue on the basis that continued stimulation with oestrin makes the uterus refractile and so they administer Progynan B and such other preparations. The biologic basis for this plan seems unconvincing—that is the present trend of thought.

Functional uterine haemorrhages.—

This is another of the common conditions which the physician meets with in everyday practice. The bleeding may occur at puberty, adolescence and at or near menopause, and may be menorrhagic or metrorrhagic in nature. All are agreed that the bleeding is due to the persistence of follicles in the ovary and absence of corpus luteum and a hyperplastic endometrium in most cases. The rational treatment therefore, seems to be administration of the lutenising factor either of the corpus luteum or of the pregnancy urine. When progesterone preparations are employed, it seems best, when bleeding is of the menorrhagic type to withhold the injection until the bleeding has commenced, or even for a few days beyond this if it is not too severe. One rat unit may be injected daily for 5—6 days depending on the degree of response. In a large number of cases the bleeding may be controlled while in some there is no improvement. If the bleeding is of the metrorrhagic type and persistent the treatment should be commenced at once. The pregnancy urine hormone has been used with advantage and a combination of the two—Progesterone and Prolans—is said to give better results.

Zondek has, however, shown that more severe hæmorrhages can be controlled by intravenous medication with oestrin. Cases which did not respond to progesterone and prolans, have been cured with oestrin. Perhaps oestrin therapy may be indicated in the following group of cases:—

(1) Rare cases of functional uterine hæmorrhage with an atrophic endometrium.

(2) Ovulation hæmorrhage which is due to temporary and slight fall in blood oestrin during the changing over from the oestrous to the luteal phase in the ovary.

(3) Endocrine bleeding at the menopause which is not entirely of the metropathic type.

Habitual abortion.—Corpus luteum is essential in the early stages of pregnancy. It prepares the endometrium for the nidation of the ovum. After the 16th week it is claimed that the corpus luteum may be removed with impunity. In such a distressing condition as habitual abortion, intractable to all imaginable form of treatment, it is no wonder that corpus luteum hormone treatment attained widespread popularity. A thorough study of the patient is essential however before one dubbs the abortion as due to endocrine dysfunction. Anatomical factors, chronic nephritis and other conditions should all be ruled out by a thorough investigation. The use of progesterone preparations may be begun as soon as the existence of pregnancy is established. One rat unit 3—4 times a week, may be given with advantage till the period at which the patient usually aborts, is passed. The results have been encouraging.

Painful contractions of the uterus.—During pregnancy some patients

complain of excessive painful cramps of the uterus. Often they may be due to a calcium deficiency, but on the analogy that progesterone inhibits uterine contractions, Corpus luteum extracts have been used with success.

Vasomotor menopausal symptoms.—The flushings, aches and sweatings of menopause are well recognised phenomena. It is only as to the causation, there is any divergence of opinion. The prevailing view point is that the withdrawal of oestrin is the immediate factor in the precipitation of the characteristic vasomotor symptoms of the climacteric. On this account oestrogenic substances have been given to bring about relief. The symptoms are usually troublesome only during exacerbation so that oestrin therapy is not continuously indicated.

Gonorrheal vulvo vaginitis of children.—The plan of treatment of this troublesome disease which was suggested by Lewis in 1933 appears to have established itself as of genuine value. One of the main effects of oestrin is to build up the vaginal epithelium of immature animals to the adult type. The vaginal mucosa of the immature child is very susceptible to the proliferative effects of oestrogenic substances so that it can be built up to a close simulation of the post pubertal vagina which is notoriously resistant to the invasion of the gonococcus. By thus building up the vaginal mucosa the duration of infection is very definitely shortened. The dosage originally recommended by Lewis is 50 rat units hypodermically every day. More recently it has been shown that administration by the vaginal route is much more effective than by the hypodermic. This can be done by means of the daily insertion of vaginal suppositories of oestrogenic substances now available.

Induction of abortion and premature labour.—Very recently oestrin has been employed for purposes of therapeutic abortion and induction of labour as it is supposed to enhance uterine contractions. The results have not been uniform, but encouraging results have been put forth especially in cases of missed abortion, intra-uterine death of the foetus, and induction of premature labour. More reports are awaited before arriving at a conclusion.

Senile vaginitis.—This troublesome condition occurs not infrequently in women following normal or surgical menopause. It is associated with vaginal discharge, pruritus and is caused by infection superimposed upon atrophic changes occurring after withdrawal of the ovarian secretion. The suggestion has been made by Davis, that treatment with oestrogenic hormones may be effective in throwing off the infection by building up the atrophic mucosa. The results in a small series of cases reported seem to be favourable, though the treatment has to be continued from time to time. The dose recommended is 75—100 rat units hypodermically 3 times a week—duration of treatment six weeks.

Lastly a few remarks may be made regarding the hormones during pregnancy. The Zondek-Asheim test, its principles and uses, are too well known to require any detailed mention. It may be said, however, that the test gives accurate results in 98.5 per cent of cases. The test has been shown to be positive as early as the 4th day after the missing of one period. Since the reaction depends upon the presence of live chorionic villi being in contact with the maternal blood stream, the test will be positive only so long as the villi are alive. During puerperium the

test becomes negative within the 4th to 10th day. The test may thus be utilised in the diagnosis of missed abortion, intrauterine death of the foetus, and complete abortion. It should, however, be borne in mind that the villi take some time to die after the death of the ovum, so that an immediate negative reaction is not obtainable though the ovum be dead. The test has been useful in differentiating ectopic gestation with a live ovum from other conditions as pyosalpinx and twisted ovarian cysts. But more important is its usefulness in the diagnosis of vesicular mole and chorion epithelioma. In these two conditions, very strong positive reactions are obtained in high dilutions of the urine.

Zondek has shown that the prolans in the blood reach the highest level between the 2nd and 4th month of pregnancy and from then on decrease moderately to delivery. Oestrin on the other hand begins to increase in concentration from the 4th month.

The most rapid rise in oestrin of both urine and serum takes place during the last trimester. Blood analysis in toxæmias of pregnancy have shown a high prolans and low oestrin content. The abnormal rise in serum prolans precedes the clinical manifestation by a period of about six weeks. It would seem therefore, that such blood analysis may help to put the physician on guard as to the onset of an impending toxæmia. The uses of hormones in habitual abortion, induction of premature labour, and other conditions have already been discussed.

What has been said above is at best, only a meagre attempt to present in as concise a manner as possible, the present trend of thought regarding the female sex hormones and their uses. Much work still remains to be done and perhaps the day may not be far off when the vitamins and hormones may hold the field of medicine unopposed.

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Kidney Functional Tests.

BY DR. P. K. MANAVIKRAMA RAJA, M.B.B.S.

A systematic examination of urine ought to be the routine in all clinical examinations. We examine the urine for its specific gravity, reaction, albumin, sugar and deposits under microscope. If the urine is to contain albumin and a few casts the medical man would like to do certain tests on the renal efficiency. They are of great value in the prognosis of the cases. The chemical tests very often confirm the clinical findings. Nevertheless there are cases where the two do not go so well. Theoretically this can be explained. The kidneys might be completely healed after a severe lesion and so excrete urine of normal composition under ordinary conditions, and yet be so badly scarred that when submitted to the extra strain of certain renal function tests, they would be shown to be deficient. However, such cases must be very rare indeed in practice.

There are several methods of testing the renal function. The chief among them are :

1. Blood examination for urea, N. P. N., creatinine, uric acid, cholesterol, chlorides and calcium. Owing to the perfection of methods of blood analysis and relative simplicity of technique, this type of renal function test has been extensively used. Particularly for busy practitioners, this test ought to be very useful, in as much as the elaborate preparation and technique employed in other modern tests are difficult to be conducted. But they have their own disadvantages. A diseased kidney may show normal figures for blood urea etc., when

it shows inefficiency during other tests to be described below. For example a damaged kidney may not allow the blood urea to rise above normal until the urea clearance shows a definite fall. Only when the percentage of average normal is below 20 the blood urea, creatinin, uric acid rise.

A figure for blood urea above 40 mg. is generally taken as indicating kidney disease. Yet there are cases like prolonged vomiting, intestinal obstruction, acute abdominal lesions, etc., showing high urea. The cause of this azotæmia is not explained. In these cases a urea estimation in urine is helpful. If the urea is less than 2 per cent it is due to kidney and if over 2 per cent due to non-nephritic causes. The figures for N. P. N. and urea are not proportional to kidney damage. Obstruction of ureter and urethra produces great increase in urea. Mayers and his co-workers hold that estimation of creatinin is more reliable, over 1.5 is a sign of permanent renal damage. Here again we find cases showing normal creatinin with low renal efficiency. Again, there are cases of chronic nephritis with cedema and lipoid nephrosis which show normal figures for urea, N. P. N. and creatinine until the terminal stages. Cholesterol and albumin and globulin ratio are the tests to be done in these cases. A figure above 200 mg. for cholesterol and a relative increase of globulin in blood with a lower value for total protein are taken as indicating kidney disease.



Dr. K. S. VISWANATHAN, B.A., M.B. B.S.Sc.

(2) The volume and specific gravity of urine in normal healthy person and persons with a diseased kidney are shown below:—

	Volume—c. cs.	S. G.
Normal urine	1500	1015—1025
Acute nephritis	200—500	1025—1035
Chronic nephritis with no oedema	2000 and over	1005—1012
Lipoid Nephrosis	600—900	1020—1025

Various tests have been designed with the above figures taken as indicating different lesions. Addis' concentration test, Volhards' specific gravity test, Mosenthal's modification of Schlager and Hedinger's test are some of the most important. They are all easy to conduct if the patient cooperates well. In Addis' test the kidney is taken to be good if it could raise the specific gravity of urine to 1025. In Volhards' specific gravity test, the patient empties the bladder early morning and then takes 1200 cc. of water. Normally in the first 3 hours the urine volume should measure 1200 c.c. and the samples collected hourly should show specific gravity as low as 1003. By the afternoon urine with specific gravity 1025 must be passed. If in the first 3-4 hours an excretion as low as 400 cc. with a minimum specific gravity of 1005 were to be passed, it is taken as indicating second stage of glomerular nephritis or nephrosis or a passive congestion of kidney due to heart failure.

Macleans' urea concentration test is yet another test fairly commonly used. The patient is not allowed to eat or drink after 10 P.M. previous night till the test is finished. After emptying the bladder 15 grms. of urea in 100 cc. of water (with correspondingly smaller doses in children, 15 grms. can be given to boys aged 12

and above) is given. Patient is asked to empty bladder hourly for 3 hours and the samples are labelled 1, 2, 3. The maximum concentration exceeds 2 per cent in some one of these specimens. Maximum figure below 2 per cent indicate renal impairment. The test is useless if the first sample exceeds 120 cc. or subsequently exceeds 100 cc. Sometimes this test may give normal results in second stage of glomerulo-nephritis and in prostatic enlargement. Harrison describes it as "a comparatively gross test and a measure of nitrogenous excretion and of that only."

(3) *Injection of dye stuff.*—Among this class of tests the Vital red test of Rowntree and Geraghty is the one mostly used. This is very sensitive at certain times and is the first test to herald the recovery of a kidney from a disease. Normally the dye appears in urine within 5—10 minutes after injection and 40—60 per cent in first hour and 20—25 per cent in the second hour is eliminated. This test, however, gives normal values in the first stage of glomerulo-nephritis.

(4) The idea of a "Blood urea clearance" was first conceived when Addis and Watnabe demonstrated that with large quantities of urinary excretion the rate of urea excretion is directly proportional to the blood urea content. Earlier workers in this field were Grehan, Harrison, Ambard, Weill and several others. However, the credit for formulating a method which could be practically applied on patients should undoubtedly go to Moller, McIntosh and Vanslyke. The latter demonstrated that Addis' principle holds good when urinary excretion is above a certain limit (2 cc. per minute in adults) which he called the augmentation limit. Below this, the urea excretion was approximately

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proportion to the Square root of the volume of urine. Illustrating this, if the blood urea were to remain constant and the urine volume were diminished to $\frac{1}{2}$, (from 2 cc. to 0.5 cc.) the urea excretion would be halved.

There are two modes of clearance—a maximum and a standard clearance (represented by the letters C_m and C_s) when the urine volume per minute is 2 or more than 2 we get maximum clearance. In all other cases we get standard clearance. If we take the following Capital letters.

B = mgns % urea in blood

U = mgns % " " urine

V = vol. of urine in 1 minute to represent what are shown against them, we get $C_m = \frac{UV}{B}$

for Vcc of urine will contain $\frac{UV}{100}$ mgms. of urea which amount is present in $\frac{UV}{100} \times \frac{100}{B} = \frac{UV}{B}$

∴ B mgms of urea are present in 100 cc. blood

So 1 mgm " " $\frac{100cc}{B}$

∴ $\frac{UV}{100}$ " " " $\frac{UV}{100} \times \frac{100}{B}$

This $\frac{UV}{B}$ represents the number of cubic centimetres of blood that are depleted of its urea in 1 minute by the kidneys.

Similarly C_s can be shown to be equal to $\frac{U\sqrt{V}}{B}$

In the case of normal men $C_m = 75$ and $C_s = 54$. The results of urea

clearance test are expressed in percentage of average normal.

So percentage of average normal $(C_m) = \frac{UV}{B} \times \frac{100}{75}$

and percentage of average normal $(C_s) = \frac{U\sqrt{V}}{B} \times \frac{100}{54}$

In the case of children a correction is introduced. In this case $V = \frac{(\text{the observed volume in 1 minute}) \times 1.73}{\text{Sq. metre Surface area}}$

According as the corrected volume is more or less than 2, the C_m or C_s is calculated.

The technique of the test is not very difficult. The patient is asked to empty the bladder in the beginning. Previously he ought not to have taken his morning coffee or tea because these will interfere with the tests as they are diuretics. There is no harm in taking a dry breakfast without too much of proteins. $\frac{1}{2}$ hour after the beginning of the experiment, his blood is taken for blood urea estimation. The second sample of urine is collected at the end of an hour. This is the volume of urine excreted in 1 hr. The percentage of urea in this urine is estimated by the hypobromite method. We have now, all the data for calculation. Normally the maximum and standard clearance are 75 cc. and 54cc. respectively per minute.

The percentage of average normal should not be below 75%. A definite impairment of function is indicated when figures below 75% are obtained for percentage of average normal.

In patients with retention of urine, the bladder should be emptied at the beginning and at the end of 1 hr. by catheterisation.

Reliability of Efficiency Tests.—In class I, the blood may sometimes give normal figures for urea N. P. N. etc., even though the kidneys are damaged. Only when the urea clearance goes below 20 per cent, need the blood show increased amount of urea, N. P. N., creatinine. With diminishing renal function the phenol sulphonaphthalin test is likely to register normal values. [But this is the first one to show improvement when kidneys begin to recover. The urea concentration test of Maclean and De Wesselow may show normal concentrations in the terminal stages. Again, the test is useless if the urine volume is more than 120 cc. per hour. The urea concentration factor gives approximate same values as urea clearance, provided

urine volume is less than 100 ccs. This can usefully be employed in such cases where the patient has retention or incontinence.

One striking thing about these function tests is that they never agree all together. Sometimes one particular test is very sensitive. At other times this same test becomes unreliable. This lack of parallelism is most evident in the lesser grades of renal damage. If any of the tests were to record a marked renal inefficiency, while all others are normal, it is better to examine the patient again after a few months. Probably the different tests are recording different functions of the kidney.

A Case of Amoebic Abscess of the Liver

BY U. SRINIVASA RAO (FINAL YEAR)

Chengalvachary, aged 28 years, was admitted into Captain R. L. Haviland Minchin's wards on 16th July 1937.

Complaint.—Pain and pricking in the right lower half of the chest and right half of the abdomen.

Duration.—Fifteen days.

Previous illness.—A year ago he suffered from dysentery for ten days.

Habits.—Non-vegetarian; smokes and drinks.

Family history.—No history of any chronic illness in the family.

History of present illness.—The present complaint started with fever coming on in the evenings with rigor and leaving about 10 P.M. with sweats. This lasted a month. There was no cough. Subsequently, pain and pricking started in the right hypochondrium and right half of the abdomen. Since then the fever stopped. A fortnight ago, the patient noticed swelling of the abdomen and the ankles. He had lost weight since the onset of the illness. The patient had no fever at the time of admission into the hospital.

Condition on admission.—Patient was an emaciated and anæmic individual with a distended abdomen and a few dilated veins over it. He had oedema of the ankles and feet. There was a slight puffiness of the face but the cheeks were sunken. He was not able to lie down due to the pain and was breathless even on slightest exer-

tion. He was not jaundiced. There was no pigmentation of his body and there were no enlarged glands.

Alimentary system.—Lips were dry. Teeth were dirty. Tongue was raw and ulcerated. The abdomen was distended, more marked on the right half than the left and more above the umbilicus than below it—the right flank being full. The skin of the abdomen was not oedematous and the umbilicus not everted. There was no ascites.

There was a tumour in the abdomen extending from the right hypochondrium up to the left hypochondrium and left lumbar region and to about two inches below the umbilicus. It moved with respiration. It was hard, the surface uneven and tender on palpation. It was dull to percussion and the dullness was continuous with the liver dullness. The upper limits of the dullness were 4th and 5th spaces in the right midclavicular and mid-axillary lines respectively. The spleen was not palpable.

Respiratory system.—The chest was very narrow with prominent bony points. On the right side the lower part of the chest showed fullness, diminished movement, diminished vocal fremitus and dullness on percussion. The breath sounds and vocal resonance were also diminished.

Cardiovascular system.—Pulse: Regular, 100 per minute, weak and of poor volume and moderate tension. The apex beat was visible and pal-

pable over a diffuse area one inch outside the left midclavicular line in the 4th and 5th spaces. It was slapping in character. The borders were the 3rd rib above, one inch external to left midclavicular line on the left side and the mid-sternal line, on the right side. There was a soft systolic murmur in the pulmonary area.

Investigations.

1. *Urine*: 1020, dark brown, alkaline, trace of sugar; no albumin; no deposit.
2. *Blood smear*: Slight leucocytosis—both polymorphonuclear and mononuclear. Red blood cells—Secondary anæmia picture.
3. *Total W. B. C. Count*: 14,000 per c. m. m.
4. *Differential W. B. C. Count*:
 - Polymorphs—75
 - Eosinophils—1
 - Mononuclears—7
 - Lymphocytes—17.
5. *Fæces*: Semisolid, yellow, scanty with mucus flakes; no amoebæ either vegetative or cystic; no cellular exudate.
7. *Blood Wassermann and Kahn reactions*: negative.

Diagnosis: In the diagnosis the following points had to be borne in mind:—

- (a) History of dysentery one year ago.
- (b) Huge enlargement of the liver with tenderness.
- (c) History of fever in the evenings with rigor and leaving with sweats.

(d) Absence of fever at the time of admission.

(e) Extreme emaciation of the patient.

(f) Leucocytosis with polymorphonuclear increase.

Considering the case in the light of above factors, the following diseases suggested themselves.

Amœbic abscess of the liver.—The history of dysentery, the history of fever with shivering and sweats, the tender enlargement of the liver and the leucocytosis point to the case being one of amœbic abscess of the liver. The absence of fever at the time of admission can be explained by the low vitality of the patient. Unusual features in this case were the extreme cachectic condition of the patient and the enormous enlargement of the liver. One would naturally expect an abscess of this type to rupture earlier.

These latter points suggested the possibility of *Carcinoma of the liver*—the cachexia, the enormous, hard and tender enlargement of the liver, with moderate leucocytosis. But the enlargement was not irregular, there was no jaundice, or ascites. There was also no evidence of the existence of a primary focus.

The absence of ascites and of enlargement of spleen rule out such conditions as *cirrhosis liver*.

The cachectic condition, the smooth enlargement of the liver, the negative W. R. and Kahn were against *syphilis* being the cause.

The nature of the enlargement, the absence of any thrill and of eosinophilia rule out *hydatid cyst*.

The blood picture did not suggest any blood disease.

Progress and Treatment.

After having made a provisional diagnosis of amœbic liver abscess, the patient was put on emetine. As he was very weak $\frac{1}{2}$ grain of emetine hydrochloride was injected subcutaneously daily for four days from the 17th July to 20th July, both days inclusive.

On the 21st July, one grain of emetine was injected. Then for four days emetine was discontinued. The patient got mistura alkaline diuretica, one ounce three times a day, by mouth.

On the 26th July, the patient developed ascites and slight icteric tinge of the conjunctivæ. The pain was very severe and he was not able to lie on the left side due to the weight of the liver and the fullness of the abdomen. Oedema of the legs was less than before. He was put on calcium lactas 45 grains, three times a day.

The next day, 27th July, an exploration was done. After due aseptic precautions a wide-bore needle was passed into the 7th space in the mid-axillary line and 36 ounces of fairly thick chocolate coloured 'pus', was withdrawn. At the same time one grain of emetine hydrochloride was injected subcutaneously, mistura triple sulphatis one ounce, three times a day, was prescribed. The patient felt much relieved. Emetine hydro-

chloride one grain daily was continued for five more days.

On the 29th July, 46 ounces of liver 'pus' was aspirated.

On the 31st July, the oedema of legs had disappeared. The general condition of the patient was better. Liver was three fingers' breadth below the costal margin in the nipple line and 5th rib above. There was no visible swelling in the epigastrium. Tenderness of the liver was present.

On the 2nd August the last injection of emetine was given, as by that time a total of ten grains of emetine hydrochloride had been reached.

On the 3rd August aspiration was again done and 54 ounces of fluid was removed.

On the 10th August, the liver was not palpable, although the upper limit was in the 5th and 6th ribs in the midclavicular and midaxillary lines respectively. His general condition was good, and he was discharged.

The case is reported on account of the huge size to which the abscess developed without bursting and the amount of liver 'pus', nearly seven pints aspirated.

My sincere thanks are due to Captain R. L. Haviland Minchin, I. M. S., for kindly allowing me to report this case. I have to thank also Captain K. N. Pisharoti for the suggestions and the help he has rendered me in getting up this report.

"Some Cases of Lipoma."

BY B. N. CHANDRASEKHARAN, M.B.B.S.

I. Subramanian.—Admitted on 12-3-36. Discharged, cured on 17-4-36. Duration 6 years.

Present illness started as a small swelling on the anterior aspect of the upper part of the thigh and gradually increased in size, till it reached its present size. The swelling occupies the whole of the anterior and lateral side of the left thigh. The swelling was incised one year ago about an inch and the medical officer said it was sarcoma and thought it wise to leave it.

Patient is an old man of 75 years well nourished and of robust health for his age. Swelling is fusiform, smooth, extending antero-lateral from hip to knee. Skin is stretched but not adherent. Dilated superficial veins are found over the swelling. Patient walks normally and there is no pain or tenderness excepting the discomfort due to the weight of the tumour. No oedema in the legs.

Swelling is warm to touch and tense. There is definite fluctuation present. No lobulation could be elicited. Skin could not be moved over the swelling due to stretching. Posterior part of the thigh is free from the swelling. Movements of the hip are normal.

Measurements: upper middle lower.
of thighs: Left 25½" 25" 17"
Right 21" 18" 16".

There is a pedunculated painless swelling on the back on the left side of the spine at the level of the 10th

dorsal vertebra and a small lobulated swelling at the back of the neck. X-Ray did not help us.

Treatment.—Exploration with needle in three places. No blood.

Small exploring incision 2" long was made over the most prominent part of the tumour, deep fascia cut and the vastus externus separated. Lipoma presented itself. The exploratory incision was extended up and down about 10". Rectus retracted forwards. The tumour was found adherent for about 8" to the periosteum of the femur in its anterior aspect. The tumour was removed, bleeding points ligatured and the deep fascia closed by interrupted sutures and drained. Wound healed by 2nd intention and patient discharged cured. Weight of tumour 82 oz.

II. Narayanan Nair. 43 years Male. Admitted on 19-2-36.

Admitted for Swelling of the left Forearm. No history of trauma.

Present complaint is of three years duration. Started as a small nodular swelling about the size of a pea on the anterior aspect of the forearm about 2" from the wrist. Swelling gradually increased in size and tenderness and pain was felt as the swelling increased.

Local condition.—A diffuse soft cystic swelling on the antero-medial aspect of the forearm occupying from one inch below the elbow to about an inch above the wrist. Superficial

"Some Cases of Lipoma"

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veins were very prominent. Joints free. The part feels warm, is painful and tender. Skin freely moveable, medial margin well defined, the lateral margin being indefinite. No restriction of movements of wrist, fingers and forearm.

Operation.—Longitudinal incision 8" long on the middle line of the forearm. Deep fascia incised. Flexor carpi radialis and pronator radii teres were pushed forward by the tumour. These muscles were retracted and the tumour delivered out. It was 6" x 2", soft lobulated fibrolipoma, adherent to the median nerve and arising from its sheath. The nerve was isolated and tumour removed. Fascia was sutured and the skin wound closed. Healed by first intention; no impairment in movements or sensation in the hand. Weight of tumour was 14 oz.

III. P. D'Souza: Admitted on 31-5-36 Discharged on 10-6-36. Male, 48 years, Indian Christian.

Started as a small painless swelling on the left side of the neck. Diagnosed as tuberculous abscess and was treated with calcium and electrotherapy outside. The tumour was elastic and soft. No tenderness, no glandular enlargement.

Incised over the sternomastoid. The sternomastoid was retracted and the tumour delivered out. A lipoma 2" long by 1½" was delivered out from the cervical fascia, and skin closed. Healed by first intention.

IV. Name—S. B. S., Muhamadan male, age 48, admitted on 23rd May 1937. Discharged on 16th June 1937.

Patient was admitted into hospital for an irregular swelling of the right leg of 8 years' duration. There was no pain or tenderness and no limitation of movement. There was discomfort due to

the weight of the tumour. It started as a small swelling on the calf and increased gradually to present size.

The tumour was irregular, soft, warm to touch. No prominent veins over the tumour. It extends 4" below the knee to the level of the malleoli occupying the postero medial side. Skin is freely movable.

X-ray Report. A large rounded encapsuled tumour noted in front of the muscles of the calf.

Operation.—A linear incision along the medial side of the leg from the medial malleoli to the middle of the calf. Deep fascia incised. Calf muscles retracted and the tumour, a large lipoma, presented itself. The capsule was incised and the tumour en masse was shelled out. It was a sub-fascial lipoma and the capsule was found adherent to the interosseous septum also. Deep fascia sutured and skin wound closed. Weight of tumour 3 lb.

Pathological report—Lipoma.

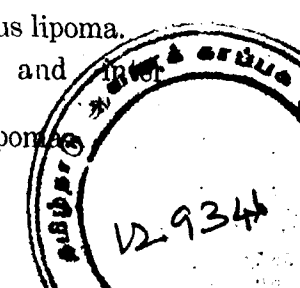
Lipomas.

They are the most simple of all benign growths. However long its duration and however large in size it always retains its simple structure without any change.

Origin.—Like other connective tissue tumour it is of mesodermal origin.

Structure.—It consists of fat and is lobulated and paler in colour than the surrounding normal fat. It has a well defined fibrous capsule, firmly fixed to the surrounding tissue, but loosely connected to the tumour itself. Histological examination shows the structure of a lipoma to be that of normal adipose tissue.

Types.—(1) Subcutaneous lipoma.
(2) Subfascial and muscular lipomas.
(3) Parosteal lipoma.



Med. Wschr. July 2nd 1937, Koranyi and Szent-Gyorgi give an account of the new treatment of diabetic ketosis with succinic acid. Only five cases have been so far treated. In one of these as little as one gram daily orally completely removed the ketosis. In another a severe case requiring 70 units of insulin daily, they discontinued the insulin injections and gave instead 10 grammes succinic acid per day orally. By the fourth day while the glycosuria was unaltered the acetone bodies disappeared from the urine. When the use of the acid was stopped for a few days the ketosis recurred. Finally it was possible to reduce the dose of succinic acid to one gramme daily, and by the simultaneous administration of ten units of insulin daily the urine could be kept sugar free—in contrast to 70 units given previously. It is recommended that in a new case a daily dose of ten grammes of succinic acid should be maintained until a couple of days after disappearance of acetonuria, and then it should gradually be reduced. It is given after meals as a 2 per cent. aqueous solution in divided doses. Unfortunately severe nausea is produced owing to its unpleasant taste. So attempts are being made to give it in capsules or as the calcium salt.

Szent-Gyorgi has developed a theory that tissue respiration is catalysed by certain C-dicarboxylic acid of which succinic acid is one. He now claims that the oxidation of pyruvic acid, an intermediary substance in the metabolism of carbohydrates is catalysed by this C. acids. According to him if this catalysis fails pyruvic acid is not oxidised but is instead converted into acetone bodies, the failure to catalyse the oxidation being due to a shortage of C-dicarboxylic acids in diabetes, either because their forma-

tion is inhibited, or because their destruction is accelerated. Administration of small amounts of C. acids such as succinic acid, it is argued, might thus restore catalysis of the pyruvic acid oxidation and so stop the formation of acetone bodies.

Lawrence, in a communication to the *Lancet* (31-7-37), mentions the entirely negative results got by him in two cases with Succinic acid and pleads that it is as yet *premature* to enthuse over Szent-Gyorgi's claims.

The Drug Treatment of Myasthenia Gravis:—We owe the use of **Ephedrine** in Myasthenia gravis to Dr. Harriet Edgeworth, herself a victim of the disease. She noted an improvement when taking ephedrine for other purposes. Then she took it systematically, the optimum dose being $\frac{3}{4}$ gr. daily. She is now able to live a normal but restricted life.

The explanation of this action is probably found in the work of Orbelli (1923) who using an excised muscle preparation showed that stimulation of the sympathetic nerve endings diminished fatigue, the maximum effect being reached some time after sympathetic stimulation had ceased. It has been shown further by Cannon and Price (1913) that adrenaline diminished muscular fatigue. Ephedrine is like adrenaline but the action is more prolonged. Benefit therefore follows its use in myasthenia gravis owing to its sympathetic stimulator effect.

Glycine was first used in this disease by Thomas *et al* (1932). Boothby and others in the Mayo clinic tried it on eight cases and all showed improvement, but seven of the eight were given ephedrine also. In one patient treated with glycine only marked

Extracts.

THE PATHOGENESIS OF CARCINOMA OF THE STOMACH.

(BY SIR A. F. HURST—*Guy's Hospital Gazette*, 3rd July 1937.)

There is no immediate prospect of any successful treatment for at least 90 per cent of cases of carcinoma of the stomach. We must therefore turn to prophylaxis. I believe that carcinoma never develops in a healthy stomach. I have published abundant evidence to show that in the 70 per cent of cases with achlorhydria the carcinoma results from malignant degeneration of chronically inflamed mucosa, the achlorhydria being a result of the preceding gastritis and not of the carcinoma. In the remaining 30 per cent of cases with a normal or high acidity the evidence is equally conclusive that the carcinoma is a result of malignant degeneration of a simple ulcer. The chronic gastritis and the simple ulcer are caused by chronic irritation, the former especially in individuals born with a hyposthenic gastric constitution and the latter in those with a hypersthenic gastric constitution. People with an average stomach are probable less likely to develop gastritis or ulcer when their gastric mucous membrane is subjected to chronic irritation; they are therefore less liable to carcinoma of the stomach.

The irritants which give rise to gastritis and gastric ulcer are mechanical, chemical and thermal; food insufficiently broken up and softened owing to its coarse character, to hurried meals, or to insufficient teeth or dentures irritate the mucous membrane mechanically; alcohol and tobacco, highly seasoned food, drugs, and saliva swallowed by patients with oral sepsis are chemical irritants; very hot and very

cold food and drinks are thermal irritants.

The total incidence of cancer is approximately the same in both sexes in the rich and the poor and in all nations with one supremely important exception—the stomach being involved three times as often in the poor as in the well-to-do.

It seems reasonable to assume that the more frequent and more severe irritation of the gastric mucosa leads to a greater incidence of achlorhydric gastritis in individuals with the hyposthenic gastric constitution and of gastric ulcer in those with the hypersthenic gastric constitution. If my views as to the origin of carcinoma of the stomach are correct, this would explain why its incidence is so much greater in Holland than in England. Insufficient teeth and dentures and oral sepsis, coarser food and stronger tobacco may account for the greater incidence in the poor compared with the rich.

At present we have no knowledge of how the general liability to cancer can be controlled, and the organ inferiority which predisposes to achlorhydric gastritis on the one hand and to gastric ulcer on the other cannot be modified. But the extrinsic causes—gastric irritants of all kinds—however trivial they may appear to be, can be avoided, and it should at least be possible to lower the incidence in the very poor by two-thirds to bring it down to the level of the incidence in the well-to-do.

The future is full of hope. By preventing the development of achlorhydric gastritis and gastric ulcer in the predisposed by simple hygienic methods cancer too should be prevented; and even if gastritis and gastric

ulcer are not abolished, their early recognition and adequate treatment should result in their cure before malignant degeneration has time to occur.

EFFECT OF BREATHING EXERCISES ON THE MOVEMENT OF THE DIAPHRAGM.

BY PROFESSOR DR. G. BOEHM.

(From the Institute for Physical Therapy and Roentgenology, University of Munich.)

The effect of breathing exercises on lungs and circulation has been long known, but, we regret to say, much too little used in hospital treatment.

If one examines the movements of the thorax in deep breathing of healthy men by means of the X-ray screen, it will be found that many subjects, especially those not engaged in manual work or those who do not take regular exercise, breathe very superficially. Either the thoracic or diaphragmatic breathing is neglected. The results may be breathlessness in bodily exercises, liability to disease of the lungs, premature fixation of thorax, and even failure of the circulation.

If by attention to these facts the physician can prescribe suitable breathing exercises, they will act as a prophylactic in those with healthy lungs. Thus the wholesome effect of breathing exercises will become evident, especially to those who have passed through diseases of lungs and pleura, resulting in a restriction of the freedom of pulmonary movements. The reflex sparing of the diseased side in the acute and painful stage, in pneumonia, must after the temperature has fallen, be abolished by proper breathing exer-

cises for the diseased side, directed to this end. More rapid absorption of the remains of the consolidation and especially resolution of pleural adhesions will through this means be attained. Especially important are good breathing exercises introduced at the proper moment in exudative pleuritis, having a rheumatic or tuberculous basis, and as a post-operative treatment in emphysema. In the after treatment of acute tuberculous pleurisy, the indications and choice of moment for commencing mechanotherapy and finally the dosage, are of the greatest importance and not always very easy to decide on. Above all, the possible presence of an acute tuberculous focus in the lung of the diseased side must be taken into consideration. Naturally every active focus, even mild fever, and above all open pulmonary tuberculosis, exclude every form of mechanotherapy. If an exudate is still present, or there is much pleural thickening, clinical or X-ray conclusions as to what is behind the underlying part of the lung is often very difficult. The exact temperature, and attention to the smallest and even subfebrile rises afford the surest means for deciding on our method of treatment. We

know positively that if a focus has not quite settled down, too early commencement of mechanotherapy may relight it. So long as there is a marked exudate, and there is no decided subsidence of it with a normal temperature for several days, breathing exercises are naturally excluded. Small remnants of a distinctly falling exudate with freedom from fever are nevertheless no contra-indication to mechanotherapy. On the contrary we imagine that adhesions of pleural surfaces are better prevented when the pleural surfaces are still separated by some fluid. The resolution of pleuritic adhesions once they have taken place is probably possible, as we know for certain from kymographic control, but cannot always be attained. We must therefore start our breathing exercises as soon as possible.

The induction of a *pneumothorax* following on the aspiration of the fluid may sometimes prevent extensive adhesions, especially of the upper and front parts. One must, however, guard against too long continued pneumothorax, since, especially in the presence of still active inflammation of the pleura, the collapsed lung becomes covered by such a solid *arthour* of thickened pleura that it prevents the lung expanding again when the pneumothorax is stopped. Contraction of the corresponding side of the thorax and lateral curvature of the spine are then inevitable, and can no longer be removed by breathing exercises.

The after treatment of a non-tuberculous emphysema which has been operated on, by means of breathing exercises after the wall of the thorax has been closed, is very useful. One can then pursue vigorous breathing exercises right from the start without the fear of doing any damage.

If pleuritic adhesions have occurred on a chronic pneumonia or a bronchiectasis the function of the diaphragm can here also with certainty be improved. In bronchiectasis one must not forget to do the breathing exercises in the proper Quincke position so as to bring about the greatest possible emptying of the bronchial dilatations.

In general terms I would recommend the following procedure.

First, the patient must lie on his back, breathe deeply, paying attention to the movements of thorax and abdomen. In rib breathing it is useful to give the number of breaths to be taken at the same time the affected half of the thorax must be measured in both deepest inspiration and expiration along a line taken from the midsternum to the line of the spinous processes at the height of the mamillary line in men and under the mammae in women. The fixing of these measurements at the commencement of treatment is a valuable means of judging the therapeutic results both for physician and the gymnast. The increase and decrease respectively of the measurements is a spur to the active co-operation of the patient. The movements of the *diaphragm* can best be ascertained by kymography after Pl. Stumpf.

Both thoracic breathing and diaphragmatic breathing must always be given the same importance. The movements of the diseased side can be specially facilitated by laying the patient on the sound side and putting the healthy lung as much out of action as possible by placing a hard pillow underneath. By bending the vertebral column with the concavity towards the sound side the fan-like spreading out of the ribs on the affected side during inspiration is favoured. A further help is given by the expansion

of the ribs by raising the arm over the head.

Plenty of rib and flank breathing is the basis for opening up of the complementary space. Inspiratory enlargement of the distance between vertebral column and of the lateral and front parts of the diaphragmatic border helps the flattening of the diaphragmatic dome. The greater the mobility of the ribs the better the movements of the diaphragm. In exercising *expiration* the support of the abdominal muscles must not be left out of account. Should the abdominal muscles be slack at the commencement, or, as in the case of elderly women or fat men, strong contraction of the abdominal muscles can no longer be expected, the expiration must be supported by the manual compression

of the gymnast. In *inspiration* the patient's attention must be directed to the importance of arching the abdomen. In the later stages of the breathing exercises the arching of the abdomen must be done against resistance. At the commencement, the breathing exercises of ribs and flanks, and that of the diaphragm and abdomen, can be done separately, so as to make clear to the patient his active part in the treatment. The combination of both types of breathing must be commenced as soon as possible. There still exist enough gymnasts and even physicians who believe that in strong inspiration the chest must be arched and the abdomen drawn in. Patients often make this mistake, by which method the diaphragmatic respiration is as good as excluded.

WHAT ADVICE WOULD YOU GIVE A MOTHER WHO WISH TO HAVE HER CHILD TO ESCAPE DENTAL CARIES?

(By M. A. RUSHTON—*Guy's Hospital Gazette*, May 1937.)

The view that dental caries is due to inadequacy of the diet in some particular, chemical or physical, is almost universally held, when, for example, dental caries was introduced among the Eskimos together with sugar and biscuits it might be said that the caries was due either to the diet or to the introduction of infection at the same time.

The effect of diet in preventing or promoting caries has been studied in many ways. Observation of the teeth of uncivilised peoples has shown that good teeth may be preserved on diets so different from one another as to have little in common except the property of supporting life. For example the Eskimos were found to feed on seal, walrus, whale, reindeer, fish and

sea-fowl, while the East Indians fed on wheat-bread, beans and milk.

The effects of varying the diets of civilised peoples is another obvious course of investigation.

In recent years investigations have been carried out either to test the effects of diets deemed to be complete or to evaluate the result of varying or increasing single factors in the diet. One such, carried out in Birmingham for the Medical Research Council, has just been ended, and, as it was a carefully planned investigation supported by a grant from the Dental Board, we can do no less than make a careful analysis of the results.

The object of the investigation was to determine the effect on dental caries

Extracts

of adding extra vitamin D in the form of radiostol or of cod-liver oil to the habitual diet of Birmingham children living in certain charitable institutions.

There were two principal investigations. In the first the children were divided into three groups: one of these had a daily ration of treacle added to its diet; the second olive oil; and the third cod-liver oil. In the second investigation one group had olive oil added and the other olive oil plus radiostol. The children were inspected at intervals, and the investigations lasted 3 and 2½ years respectively. The average age of the children at the beginning of the experiment was about 9½.

The results will be considered first from the point of view of possible prevention of caries by diet. In investigation I, there was no statistically significant difference in the absolute percentage increase of carious permanent teeth in the cod-liver oil, olive oil and treacle groups; nor in the deciduous teeth between the cod-liver oil and olive oil groups. For teeth which erupted in the course of the experiment, taken separately, however, there was a difference, the incidence of caries being 26, 19 and 12 per cent in the treacle, olive oil and cod-liver oil groups respectively. This shows that for these teeth cod-liver oil was beneficial as compared with olive oil and treacle, but that, in spite of it, an incidence of caries of 12 per cent occurred among such teeth within three years of eruption. In the case of the erupting premolars and second molars, considered separately, there is a significant difference to the advantage of the cod-liver oil group, but it must be noted that no less than 41 per cent of second molars in that group became carious within at most three years of eruption; and since the average

age of this group at the beginning of the experiment was 9½ years, most of them can only have been erupted for about one year by the end of it. This is no mean rate of incidence. It is interesting also to note that the beneficial effect of giving olive oil as compared with that of giving treacle in the case of erupting teeth was as great as that of giving cod-liver oil compared with that of olive oil; so that if no cod-liver oil had been given, the experiment might have been held to prove the virtue of olive oil or the virulence of treacle.

Investigation II, in which olive oil was given to one section and olive oil plus radiostol to another gave a more marked result. The figures for the permanent teeth taken together show a significant difference between the absolute increase percentages in the olive oil and olive oil plus vitamin D groups, the figures being 14 and 8 respectively. In the deciduous teeth there was no difference. For the newly erupted teeth taken together the figures were 18 and 8 per cent; for premolars separately 13 and 3 per cent; for the second molars 54 and 17 per cent; all significant differences.

The addition of radiostol thus reduces the incidence of caries in the erupted and erupting permanent teeth of Birmingham children fed on the diet in question. There is, of course, no question of complete prevention; the second molars in the radiostol group became carious at the rate of 17 per cent in the time between eruption and the end of the experiment, probably less than a year. With regard to the possibility of complete prevention of caries being produced by the administration of vitamin D from pregnancy onwards, that is open to proof; we have no evidence before us.

Next considering the extension of caries as distinct from its incidence, we

have another set of figures, the extension being estimated by an Average Caries Figure determined in a reasonable manner. In investigation I, there was no difference for the permanent teeth between cod-liver oil and treacle groups, or for the deciduous teeth between cod-liver oil and olive oil groups. In the case of the permanent teeth the spread in the cod-liver oil group was almost 100 per cent. When all teeth, permanent and deciduous, are taken together, however, the cod-liver oil group is found to have the advantage, and this is also true for the teeth that erupted during the experiment. In the second investigation there was significantly less spread in the permanent teeth in the vitamin D group, the increase in the Average Caries figure being 68 per cent for all teeth taken together. From this we must conclude that the addition of vitamin D to the diet of children in the circumstances of these Birmingham children delays the spread of caries in permanent teeth. The result is not impressive, however. The extension was at the rate of 93 per cent in three years and 68 per cent in two and a half years in the cod-liver oil and vitamin D groups respectively. This should be compared with the results of Boyd and Drain, who in 1931, by giving a planned and full diet and making sure that it was eaten, were able to produce complete arrest of caries with stony hardness of the dentine in ten weeks in every one of eleven children with rampant decay. Comparison suggests that an adequacy of vitamin D is by no means as pre-eminent a factor in the prevention of caries as the authors of the M.R.C. report might lead one to suppose, and that while the addition of this vitamin to the diet can produce some improvement, especially with respect to teeth which are about to erupt, yet success in the prevention of dental caries lies

rather in the provision of a diet which is complete in a large number of particulars than in adding one vitamin to that commonly used.

The beneficial result of adding vitamin D to the diet of the Birmingham children is probably as McCollum suggests, simply due to the fact that their diet was inadequate in what everyone will admit is an important particular; and there is no evidence to suggest that an unlimited quantity of vitamin D will prevent dental decay any more than was done in that experiment.

Primitive man preserves the instinct as to what quantities of various foods available should be eaten, and of course the actual diets differ greatly in different parts of the world according to the race and life of the people, the climate and kinds of food obtainable.

That the instinct for food selection still persists vigorously in the very young of the human race was shown in the interesting experiment of Davis. This was performed on 15 babies from six to eleven months old, who were allowed to select their own food, both quantity and quality, from a large number of raw or simply cooked natural foods (meats, glandular organs, whole cereals, vegetables, fruits, eggs, milk and salt) without any guidance or restraint whatever. All the children, who were carefully watched, did extremely well, none of their teeth decayed during the course of the experiment, and two of the boys who have continued the regime and are now 8½ and 9 still have no dental caries.

Unfortunately, the child's power of selection seems to become entirely unreliable in many cases after a few years. In Michigan, a small group of

caries-free children was compared with another of caries-susceptible children. It was found that the caries-free children had excellent appetites, were not faddy about their food, and had no great craving for sweets. The caries-susceptible children ate irregularly, were very faddy, and ate theoretically unsatisfactory diets, and had a great craving for sweets and highly sweetened foods. In relation to Broderick's hypothesis, it is interesting to note that no consistent chemical difference could be found in the blood or saliva of the two groups.

An important series of experiments carried out by Boyd and Drain supports the view that the preservation of the teeth depends upon the selection of a diet more nicely chosen than is necessary for the preservation of a reasonable degree of health in the rest of the body, and seems to show that upon such a diet dental caries may not only be prevented but also arrested. It began with the observation that in a certain number of children in hospital the soft dentine of carious cavities had become hard. On investigation it was found that these were all diabetic children who were receiving insulin and a certain diet. The latter was so arranged that fat rather than carbohydrate was the source of energy, the proportions of protein, carbohydrate and fat being 7 : 9 : 21. The total diet had a basic ash, and consisted of a quart of milk a day, cream, eggs, meat, cod-liver oil, bulky vegetables and fruit. Since the arrest of decay might have been due to the insulin (and Broderick claims that hardening of carious dentine has followed its use in his cases), the next step was to try the effect of a similar diet on children who had not got diabetes. Four children with much caries and softened dentine were, therefore put on this diet for two months or so, and at the end of this

time the dentine was of stony hardness—a result which may well be compared with the spread of caries occurring in Birmingham experiment in spite of giving extra vitamin D. Two of the children were then placed upon the ordinary ward diet and allowed to choose their food, and very active decay recommenced. Further experiments were as follows: five children below school age were given the original diet, but with rather more carbohydrate in their own homes, and in all, caries was arrested in ten weeks.

Even more striking was the effect observed in four cases of coeliac disease in which fats could not be given. These had much of their food in the form of sugar and carbohydrates, but about twice the usual quantity of protein; and in two who already had caries the condition was arrested, while in the two babies it did not develop. The diet could thus be varied to a large degree without affecting the result, but the investigators regarded certain features as the most important: 1 gramme of portein a day for each lb. of body weight, fresh fruit and fruit juices, and cod-liver oil. The principal factor in preventing caries, they considered, was the adequacy of the diet and the balance between its various constituents. In the conditions of the experiment it was disastrous to allow the children to choose their own food (they were much older than in Davis's experiment)—either they did not eat enough, or too much of a single kind. In the latter case they would not have enough appetite for a sufficiency of the other necessary parts of the diet.

The kind of food of which children will eat too much if left to themselves is apparently sugar and carbohydrates, but whether the pernicious effect which sugar is supposed to have is due to preventing other food from

being eaten or not must still be an open question; it might for example, act through being a good culture medium for *Bac. Acidophilus*.

It is a very pertinent question, and one on which we should all form an opinion. Although the protagonists of various schemes for preventing dental decay are in many cases strongly opposed to one another, it is a fortunate thing that their remedies are not incompatible. The only regime of well-proved worth is that of Sim Wallace. But this is not vitiated by the addition of excess vitamin D or of suitably tested milk, or of a high protein content; and there is no reason why the diet should not be arranged so that it is completely adequate physiologically, and, in addition, has a basic ash.

It is frequently written that the diet of the mother during pregnancy

has a bearing on the question, but there is small proof of this. The foetus appears to take from the mother everything it wants, whether the mother has it to spare or no.

The recommendation of a diet such as I have mentioned for the child is probably the utmost we can do at the present time to prevent the child's teeth from decaying. Tooth-brushing and visits to the dental surgeon are a last line of defence, the comparative inefficiency of which we well know, though they are at present very necessary.

It seems likely that the best way to bring up children with healthy teeth will be to treat them as a farmer treats his stock, that is to feed them a carefully selected diet under proper supervision, possibly through the organisation of school meals.

"THE HOSPITAL AS A COLLEGE"

Extracts from the Lecture of Sir William Osler before the Academy of Medicine, New York, 1903.

The Hospital is the only proper College in which to rear a true disciple of Aesculapius.

ABERNETHY.

The most essential part of a student's instruction is obtained, as I believe, not in the lecture room, but at the bedside. Nothing seen there is lost; the rhythms of disease are learned by frequent repetition; its unforeseen occurrences stamp themselves indelibly on the memory. Before the student is aware of what he has acquired he has learned the aspects and causes and probable issue of the diseases he has seen with his teacher, and the proper mode of dealing with them, so far as his master knows.

OLIVER WENDELL HOLMES, *Introductory Lecture* 1867.

The problem before us as teachers may be very briefly stated: to give to our students an education of such a character that they can become sensible practitioners—the destiny of seven-eighths of them.

The special growth of the medical school in the past 25 years has been in the direction of the practical teaching of science. Everywhere the lectures have been supplemented or replaced by prolonged practical courses.

The young fellow who is sent on to us in his third year is nowadays a fairly well-trained man and in a position to bringing his life's work in those larger laboratories, private and public, which nature fills with her mistakes and experiments.

My firm conviction is that we should start the third year student at once on his road of life. Ask any physician of twenty years' standing how he has become proficient in his art and he will reply, by constant contact with disease; and he will add that the medicine he learned in the schools

was totally different from the medicine he learned at the bedside.

In what may be called the natural method of teaching the student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools as means to an end. The student starts, in fact, as a *practitioner*, as an observer of disordered machines, with the structure and orderly functions of which he is perfectly familiar. Teach him how to observe, give him plenty of facts to observe, and the lessons will come out of the facts themselves. For the junior student in medicine and surgery it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself. The whole art of medicine is in observation, as the old motto goes, but to educate the eye to see, the ear to hear and the finger to feel takes time, and to make a beginning, to start a man on the right path, is all that we can do.

The work of an institution in which there is no teaching is rarely first class.

There is not that keen interest, nor the thorough study of the cases, nor amid the exigencies of the busy life is the hospital physician able to escape clinical slovenliness unless he teaches and in turn is taught by assistants and students. It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases are more fully studied and fewer mistakes made.

I envy for our medical students the advantages enjoyed by the nurses, who live in daily contact with the sick.

In the present state of medicine it is very difficult to carry on the work of a first-class hospital without the help of students. We ask for too much of the resident physician, whose number has not increased in proportion to the enormous increase in the amount of work thrust upon them, and much of the routine work can be perfectly well done by senior students.

What I wish to emphasize is that this method of teaching is not a ward-class in which a group of students is taken into the ward and a case or two demonstrated; it is *ward-work*, the students themselves taking their share in the work of the hospital, just as much as the attending physician, the interne, or the nurse. Moreover, it is not an occasional thing. His work in medicine for the three months is his major subject.

There are hundreds of earnest students, thousands of patients, and score of well-equipped young men willing and anxious to do practical teaching, *Too often, as you know full well, "the hungry sheep look up and are not fed;" for the bread of the wards they are given the stones of the lecture-room and amphitheatre. The dissociation of student and patient is a legacy of the*

pernicious system of theoretical teaching from which we have escaped in the first and second years.

For the third and fourth year students, the hospital is the college; for the juniors, the out-patient department and the clinic; for the senior, the wards. They should be in the hospital as part of its equipment, as an essential part, without which the work cannot be of the best. They should be in it as the place in which alone they can learn the elements of their art and the lessons which will be of service to them when in practice for themselves. The hospital with students in its dispensaries and wards double its usefulness in a community. The stimulus of their presence neutralizes that clinical apathy certain, sooner or later, to beset the man who makes lonely "rounds" with his house-physician. Better work is done for the profession and for the public; the practical education of young men, who carry with them to all parts of the country good methods, extends enormously the work of an institution, and the profession is recruited by men who have been taught to think and to observe for themselves, and who become independent practitioners of the new school of scientific medicine—men whose faith in the possibilities of their art has been strengthened, not weakened, by a knowledge of its limitations.

It makes of the hospital a college in which, as clinical clerks and surgical dressers, the students slowly learn for themselves, under skilled directions, the phenomena of disease. It is the true method, because it is the natural one, the only one by which a physician grows in clinical wisdom after he begins practice for himself—all others are bastard substitutes.

The following are extracts from the speech delivered by Sir Mirza Ismail, Leader of the Indian Delegation to the Inter-Governmental Conference on Rural Hygiene held at Bandöng, Java on August 3:—

Beggar Problem.

The great checks on the growth of the population, such as famine and widespread epidemics, have to a great extent been done away with, and, as a result, you have a pressure upon the land and its produce that presents an apparently insoluble problem. It is rendered no easier of solution by the fact that an army of fourteen million beggars, many, if not most, of them able-bodied, contribute nothing to their own sustenance.

Nutrition.

One of the most important subjects with which the Conference has to deal is that of nutrition. Our aim is not only to prevent disease but to improve the health and vitality of the people. Improvement in diet will further both ends. Malnutrition is widespread throughout India and there can be no doubt that great deal of ill-health, low vitality and disease is due to insufficient and improper food.

Milling Rice in India.

Particular attention should, I feel, be given to what is sometimes called the "rice problem." In milling, rice is deprived of some of its valuable elements. At present, mechanical rice mills seem to be spreading everywhere; I would ask you to consider whether the erection of rice mills on the present

plan should not be checked, or whether some process of rice-milling without the loss of all the most nutritious elements cannot be popularised.

Formation of Central Advisory Board of Health for India.

At this point I may suitably mention the recent creation of a Central Advisory Board of Health for all India, which is attended by public health authorities from the various Provinces and States. It will be among the tasks of the Central Health Board to guide public health policy throughout the country. We may confidently hope that much good will result from the activities of such a representative body.

Malaria.

Of the formidable list of diseases with which India is afflicted, malaria is certainly the one which exerts the most adverse influence on the health and prosperity of her people. Although less dramatic in its immediate effects than the great epidemic diseases, such as plague, cholera and small-pox, malaria is a relentless scourge which is responsible for incalculable suffering and economic loss. It has been estimated that some 100,000,000 people in India suffer yearly from malaria and that, of these, at least 1,000,000 die from its direct effects. The debility, poverty and apathy caused by this disease are factors of the first magnitude in retarding the national, social and economic progress of the country.

Rural Hygiene.

In my opinion, second to none in importance is the provision of a safe and

adequate water-supply for every village. Of almost similar urgency is the making of provision, by means of a suitable type of latrine, not only for preventing human waste from forming breeding centres for diseases, but also for returning it to the land in order to restore its productivity. There is no lack of technical knowledge in respect of these matters. Much, however, remains to be done by those central and local bodies who are responsible for the health and welfare of the people, particularly in the matter of drinking water wells.

* * *

There is, however, a baffling enigma that still remains. I refer to the difficulty of creating in the peasant a spirit of self-reliance. Years of heart-breaking experience on the part of many devoted workers have shown how almost impossible it is to rouse him from his pathetic contentment with things as they are. Numerous instances show how under energetic leadership he can be induced, so long as the leadership lasts, to mend his ways in most, if not all, of the respects to which I have referred, but much depressing experience shows that as soon as the leadership is withdrawn the experiment is apt to collapse. My own belief is that our main, if not our only, hope lies in working through the rising generation. It is sometimes said that what we have to do is to "rouse the sanitary conscience of the people." A conscience in my experience consists largely of an instinctive reaction to precepts learnt in childhood, and if you have learnt no sanitary precepts in childhood, you can have no sanitary conscience. Our aim, therefore, should be to implant in the rising generation the seeds of health by care during infancy and the

seeds of a sanitary conscience by instruction in healthy habits at play centres, schools and colleges. We should teach them the use of pumps and sanitary latrines by installing them at schools and colleges and insisting on their proper employment. We should teach a knowledge of proper foods by insisting on their use at all government hostels or other institutions which we can control. And I think we may hope in this way to promote the coming of a generation that will have so learnt how to appreciate the comforts of sanitary living, that they will refuse to relapse into the old apathy when they come to set up homes for themselves.

Public Health Act to be Introduced.

In a speech recently delivered before the Trichinopoly District Medical Association, Dr. Rajan referred to the plan he had in mind for the introduction of the Public Health Act for the Province which he hoped to present not only to the Legislature but to all the citizens of the country for public support. He appealed to the medical profession to explain and interpret it to the people in terms of public welfare and public health and if they were able to enhance the average life of the people by at least some years, they would have deserved well of themselves and of posterity.

Extract from Major-General Sir Frank Connor's address to the Rural Medical Service.

At the Conference of the Subsidised Rural Medical Practitioners, Major-General Sir Frank P. Connor placed before them the true spirit of service. He said,

Extracts

"We doctors have been taught to give relief to the poor for nothing. The spirit of service must never leave us. But we are not all missionaries. I think the predominant note must always be that of a certain amount of sacrifice on your part towards the problems of India, and I say that until individuals, young individuals, give a great deal of their time and leisure and service for the country, the solu-

tion of problems will get on very slowly. Thousands and thousands of young men in other countries as in Germany are working like coolies in labour camps, to turn marshy lands into cultivable ones. That is the sort of thing that makes a country go ahead. When that happens in India, India will go ahead and you have a share in that picture".

Nationalism in Medicine

BY E. K. PADMANABHAN NAMBIAR, M.B.B.S.

Sir Lawrence Brock, Chairman of the Board of Control of the Mental Hospital Association of Great Britain, presiding at its annual meeting held recently in London, deplored that the progress made in his country in the field of Psychiatry was very meagre, and bewailed with the utmost chagrin "There were eminent psychiatrists in Germany, Austria and Switzerland" and "why had we produced no Freud's, Jung's, Adler's, Wagner-Jauregg's, Adolph-Meyer's?" Note that it is the ardent patriotism of the man, that raises this characteristic wail, looking, as he does, at every field of human activity, with a national outlook.

From such a state of mind, it is not a long hop to national prejudice, and we have in the recent past found the logical effects of such a militant nationalism run riot in Hitlerite Germany, where every one of the non-Teutonic scientists had to seek refuge beyond its frontiers.

Now, this narrow-mindedness is the least conducive to a healthy growth of any science in any country, and it is a note of warning against such an unfortunate chauvinism that I seek to sound in the columns of this journal.

I consider the occasion as appropriate, with a national Government guiding the destinies of our provinces and with medicine as an entirely provincial subject. When our education, culture, attire, habits, pay and prospects are being remodelled on indigenous lines, and everything foreign held at arm's length, our pilots at the helm are likely to forget the debt we owe to other lands and men, for our present status and stature. A person who owns true allegiance to science knows no bounds

set by oceans and mountains. His or her country is the whole universe.

A cry is bound to be raised in the near future that our indigenous systems of Medicine, Ayurveda, Unani and Sidha, should have the privilege of exclusive State-patronage, which until now has been enjoyed by the Allopathic. It will be difficult to resist such a cry, since patriotic fervour may not always proceed on rational lines.

A peep into the past history of Indian medicine itself ought to chasten such enthusiasts. The influence of Chinese, Persian, Grecian, Egyptian, Byzantine and Arabian medicine in the development of the Indian indigenous systems, is well-known to any student of the History of Medicine, while it is obvious that the Unani system included among the indigenous products, is entirely a graft of the Arabian.

India had always given freely of her culture to foreign countries and had as readily absorbed foreign ideas herself, never cribbed by a thought that her mental horizon should be limited by the Himalayas on the one side or the Indian ocean at the other.

The same catholicity of spirit ought to dominate our activities to-day too; we have to be as receptive of ideas from England or Russia as from Bengal or the Punjab; we have to do homage with equal reverence to a Dawson there, as to a Mudaliar here.

In ancient Greece and later during the Renaissance in Europe, professors used to wander from one country to another, from one university to another and receive cordial welcome everywhere, even when the countries

Nationalism in Medicine

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were at bitter political strife amongst themselves. So did Vesalins, Eustachius, Stensen and others of those days. England and France until 1914 had always been at each other's political throat, but their scientists did not, on that score, show any the least discourtesy to the savants on either side; Pasteur, Laennec and Bichat have been as much revered in England as Lister, Hunter and Jenner were in France. At the present day too, no student of medicine in any of the occidental countries, considers his course of medical education complete, without his having undertaken a study-tour round the noted Colleges and clinics of countries adjacent as well as of those beyond the seas. No bigoted feelings of nationalism prevents him from paying his tribute to the learned abroad and derive inspiration from their devoted lives.

But only a few among students and teachers in India ever secure an opportunity to widen thus their horizon, partly due to economic handicaps, partly to apathy and sometimes to a complacent feeling of self-sufficiency. There is a trend in the political air in India now, for a more extensive patronage to the indigenous systems of medicine—a trend which would necessarily be associated with a waning of interest in the Allopathic system. There is no occasion now to go into the comparative merits of these systems; that has to be done by an authoritative conclave of scientists of eminence; but I am only pleading for an impartial outlook on the whole question, unbiassed and unprejudiced by any ill-conceived notions of patriotism.

A disease is more or less the same in its essential manifestations in whichever country it may occur and the

best treatment for it can therefore be only one. Every patient however poor or low in life he be, ought to have, on grounds of common humanity, that approved line of treatment alone; and in no case can one enthuse over second or third rate alternatives. We must at the same time be ever on the alert to assimilate the good features of any other system in vogue, Indian or foreign.

There is room only for one system of medicine, namely the scientific system, broad-based on universally acknowledged principles of rationalism, and it ought to incorporate all that is worth while in the various systems, and relegate the numerous speculations of old which cannot stand the touchstone of reasoning and verification to the archives of medical history. Let not any feelings of mere nationalism induce men to hug these ancient flights of imagination. Old theories like worn-out machines will have to be discarded, however efficient they might have been at a certain stage. None need deplore the change.

Another aspect of such an aberrant nationalism is the economic exploitation of discoveries in therapeutics, with a view to the material advantages of the discoverer or his country. It is the foulest method of exhibiting one's blackest ingratitude to those pioneers of old but for whose selfless labours, the way would not have been paved for the present advance. There are several secret remedies good, bad and indifferent, in the hands of quacks, charlatans and pseudo-scientists, palmed off on the credulous public. They dare not be subjected to the scrutiny of a methodical investigation, or their composition published, lest the monopoly be broken and gigantic incomes levelled down. But take the case of epoch-making discoveries like

Salvarsan and Insulin. No sooner had the ideas been crystallized than the whole scientific world were hailed welcome to share the boon. This is the correct spirit to emulate.

Such an international outlook in Medicine would naturally shed its lustre on other walks of life also and induce warring nations to abide in peace with one another. Eminent cricketers have promoted cordiality amongst nations, won't medical scientists do it better still?

But an intensely national spirit of rivalry as to who contributes more to the common weal, is of course laudable and it is in that strenuous direction that the energies of our administration and of Medical men in India should be guided. All these years under the tutelage of foreign teachers, India has made some progress, but it is time she gets into her own stride free of leading strings. It is with painful concern one notes that despite all these years of work in beautiful laboratories, well-

equipped hospitals with an unequalled wealth of men and material, our nationals have scarcely succeeded in perpetuating their memory in scientific medical literature. Take any textbook on any subject medical or ancillary, and find me one outstanding name that claims its parentage in India, one name labelled on to a surgical operation, a therapeutic agent, a diagnostic method, reagent, a simple solution. Is our country so barren of resources and so lacking in enthusiasm for original work?

The resources are there, brains included, but the enthusiasm probably is smouldering, smothered by the routine of official life, cold-douched by the difficulties of the daily existence, and side-tracked by rival attractions.

And who will foster it; fan it into a flame? The public through the State. Let their nationalism and fervid patriotism find a vent for their vigour in this direction, and enable their men and women to stand equal to their confreres in other climes.

The Madras Medical College Magazine.



OUR PRINCIPAL.—We offer our hearty congratulations to Rao Bahadur Dr. A. Lakshmanaswami Mudaliar,

B.A., M.D., F.C.O.G., an alumni of our College, on his appointment to the office of Principal of the College—an event unique in its history.

Our Minister.—We offer our whole-hearted congratulations to the Hon'ble Dr. T. S. S. Rajan, M.R.C.S., L.R.C.P., on his appointment as the Minister for Public Health and Medical Administration in the new Ministry of this Province. This is the first time in the History of the administration of the Province that a Medical man has been entrusted with the work of administering Public Health and Medical Administration.

Retirement.—Major-General Sir Frank Connor, Kt., Surgeon-General with the Government of Madras, is due to retire in the middle of September 1937 after a service of thirty-five years. We wish him all happiness in his well-earned retirement.

Health Bulletin No. 23.—We draw the attention of the readers to the Health Bulletin No. 23 on the nutritive value of Indian foods and the planning of satisfactory diets, issued by the

Director, Nutrition Research Laboratories Indian Research Fund Association, Coonoor, published by the Manager of Publications, Delhi. It is priced two annas.

The Hostel and in the Meanwhile.—During the last few years the necessity of a hostel for the Medical College students has been loudly proclaimed on platform and in press. 'Straight from the horse's mouth' we have heard "The hostel is no more a dream." Assurances from authorities of earnest consideration of the construction or purchase or even renting a place have been often heard. And only the other day the Minister for Public Health answering "when?" about a hostel admitted that he did not know; that it would depend upon others and things over which he had no control—a frank admission. And in a sincere assurance he spoke he would go abegging to the Finance Minister. In spite of all these one is tempted to think that even now speculation about the hostel is idle!

And in the meanwhile, at the altar of gruesome diseases of unhygienic surroundings and unwholesome food how many of the students are laying their bodies, they that claim to learn the prevention, the cure and even the eradication of such diseases, hopeful young souls with ambi-

tion in their blood! We can no longer allow this to linger as an idle talk—this hostel business. Or don't the authorities know that year after year tuberculosis alone claims for its prey increasing numbers of young medicoes? Interruptions in studies for one year or two years, physical disablement and even death has become a matter of course in an annual programme! Amenities of hostel life, its cultural and educative value do not hold to the medicoes any more than theoretical interest. Their cry is only for a good place to live and clean food, and they would pay for that. If the state has the welfare of the public at helm of its programme can it allow its future doctors to be physical wrecks?

In the meanwhile too, under considerable difficulties some ninety of our students stay in "Jaya Mansions" trying to gain some amenities at least of a hostel. Memorials, exhortations and deputations by them have not so far roused the authorities to

extend its graceful arm of recognition. For three years these students have lived outside the protecting fold of the authority, and we sincerely hope and wish that they will continue till the balance of budget ceases to oscillate too much to one side even after the addition of the expense of building a really good hostel for the students of this College.

Vizagapatam Medical College.—Our sympathies are with the students of the Vizagapatam Medical College. It is a pity that the students of Vizagapatam Medical College who cannot in anyway be considered inferior to the products of other colleges, and for no fault of their own, should be denied recognition. We do sincerely hope and pray that the government will take such speedy measures as will enable the students of the Vizagapatam Medical College to obtain the amenities for practice and higher study as are enjoyed by the students of other medical institutions in the country.

College Comments.

Very soon after the reopening of the college this year, the atmosphere has a studious hum. The appointment of the new Principal created great enthusiasm. Then came the reception for the new graduates which was indeed a very grand function. And now the sessional examinations are approaching; and for those who are appearing for university examinations in November, time is up to have begun earnest work.

We congratulate N. Ramanathan for winning Johnstone Medal as the best outgoing student of the year. We also congratulate all those who are recipients of medals, prizes and honours certificate.

Sports—In the field of sports we had some lapses. We had been holding the foot-ball inter-collegiate trophy for some years now, and this time it looks like we have let it slip by. In cricket too, perhaps, we have to make some head-way before we could trouble the holders. Our hockey team, however, is still very strong.

After a lapse of many years our college has now won the inter-collegiate tennis singles. On the last two occasions our men made a bold bid for the title and this year Mr. Mohanrangam with service spinners and good length drives down the lines and across the courts combined with crisp volleys at the nets played a great game in the finals and won in good style.

Mohanrangam and C. J. Antony also won the doubles tournament.

Our college lady students too, have not lagged behind in sports. In their inter-collegiate sports which was conducted some time ago in our college grounds, under the distinguished presidentship of Her Highness the Maharani of Travancore, they did very well.

University Training Corps.—Enrolment to the corps was rapid. Out of 30 applicants 27 were selected. U/o S. G. Rajagopalan writes that the recruits are quite smart and that there is improvement of attendance in parades. The duration of parade hours has been increased from 1½ to two hours this year. Twenty discharge applications were granted, of which two were on medical grounds. Since Lieut. K. S. Viswanathan has taken 18 months' leave and left to America on Rockefeller Scholarship, 2nd Lieut. Chandrashekar is now contingent commander. Our "Unna" is very popular and kind. We congratulate U/o Khaleeli and C. Q. M. S. Dhirar on their being awarded the King's Coronation Medals.

Certain changes in the college have been quite welcome to the students. The University Training Corps Room now, is quite large and convenient and so is the Association Room. By the removal of the University Training Corps Room and armoury to the new place, the lady students get quite a large place for themselves. But Oliver Twist like, they still say they want more by way of furniture an additional fan (a flush out. W.c.) etc. etc.

We are happy to hear that rapid arrangements are being made to secure a proper and adequate drinking water supply.

We take this opportunity to bring before the notice of our Principal the popular need of a reading room in the college. Perhaps the entire equipment of medical study cannot be drawn from medical books alone. Arrangements to keep standard magazines, medical and general, along with some daily newspapers will be a great boon to the students, especially as we have no adequate hostel where such amenities could be provided for.

The Student Editors.

Personal.

Captain Haviland Minchin, I.M.S., rejoined his appointment as Additional Professor of Medicine and Physician, General Hospital, Madras.

Dr. B. T. Krishnan, Professor of Physiology, returned after a tour in Europe and America.

Dr. K. S. Viswanathan, Assistant Professor of Hygiene, was awarded the Rockefeller Scholarship and has left for America.

Dr. M. J. Santanakrishna Pillai, Lecturer in Radiology, is leading the Indian Delegation to the International Congress of Radiology and has left for Chicago.

Dr. C. Todatri acts as Lecturer in Radiology.

Dr. P. Madhavan, Assistant in Surgery, is transferred as A. D. M. O., Salem.

Dr. S. Balasubramanian is posted as Assistant in Surgery.

Lt-Col. M. M. Cruickshank, M.D., M.Ch., F.R.C.S.E., D.O.M.S. (Lond.), is confirmed as Surgeon and Superintendent, General Hospital and Professor of Surgery, Madras Medical College.

Dr. V. R. Sundaresan is posted as R. M. O. in place of Dr. V. Srinivasa Rao, proceeding on leave.

Dr. P. G. G. Unnithan, D.T.M. & H. is posted as Assistant Professor in Hygiene.

Letters to the Editor.

To

THE EDITOR,

THE MADRAS MEDICAL COLLEGE MAGAZINE.

Sir,

Your readers might perhaps remember that at the general body meeting of the Medical College Association held in March 1937 Mr. Ramalingam brought forward a proposal to raise the subscription of the Association. This proposal was rejected, not because the students are indifferent to the sad financial condition of the Association, but because they are not enthusiastic in paying something more than Rs. 8 which they are already contributing annually towards the Athletic Club fee, the Magazine, and the Association.

The students would appreciate nothing better, if it could be arranged to transfer a portion of the amount collected for the Athletic Club, to raise the Association subscription. This adjustment would be doubly welcome, as it does not put a further strain on the students' limited purses, as Mr. Ramalingam's proposal would have done.

I think it is very unfair that the College Association, embracing as it does, the activities of all the students of the College should languish from lack of funds, when a much larger amount is collected and spent annually by the Athletic Club, which is after all patronised only by a few enthusiasts among our sportsmen.

I hope, I will be reflecting the opinion of the majority of the students when I say, that there is a feeling amongst us that the Athletic Club is made a little too exclusive by a few interested people to be of much use to the average student who pays towards its upkeep. Although the membership of the Athletic Club is supposed to extend to the whole strength of the College we find that only a few students take part or are encouraged to take part in the activities conducted under its auspices. After all, the selection and training of a 'College Eleven' is not the sole or ultimate aim of a comprehensive system of physical education. Therefore, we, average students consider it unfair that we should continue to pay heavily for amenities we are not allowed to enjoy.

I would suggest that the students should move at the next general body meeting :—

"That the fee for the Athletic Club be reduced from Rs. 5 a year to Rs. 3 a year; that the subscription for the College Association be raised from Re. 1 a year to Rs. 2 a year..

I thank you for extending the hospitality of your columns.

Yours, etc.,

18-8-37 G. PARANKUSAM NAIDU,

Sir,

I beg to draw your attention to a statement in connection with the University Library—"The Library is in the new University Library Buildings, Marina, Chepauk. *There is a convenient tram and motor bus service to and from all parts of the city". So far as I know the nearest that bus service comes, is in the turning at Bells Road, Chepauk, from which point the Library is well over three furlongs. There is no tram service anywhere near.

Yours sincerely,

'READER'.

Sir,

I beg the hospitality of your columns to say a few words about the College Calendar. The College Calendar is sold at 12 annas and every student is compelled to buy it every year. A change in the feature of the Calendar is only the annual "Calendar" of working days, holidays, etc., the rest of the literature is almost the same. Therefore, it appears to me, that if a student buys a 12 annas Calendar as soon as he joins the College and is at the beginning of every academic year supplied only the 'Calendar' part of it at a very low price, a large amount of waste in printing costs and indirectly the students' money could be saved.

Yours, etc.,

"A POOR FELLOW."

* The idea of convenience and distance is only relative.—(Ed.)

Our Personalities No. 5.

MRS. L. K. NIMBKAR.

BY BOILER.

The other day I saw Mrs. Nimbkar at the rehearsals for the College Graduates' Reception. The girls were practising a dance. Mrs. Nimbkar stood by the side conducting the show in the approved Malcolm Sargent or Beethoven style. Some of the tyros, in between, cast a few sidelong looks at the few who formed the encouraging audience.

"But the Matron's glance those looks reproved"

and order was restored. Soon after stop some of the folk started keeping steps as they fancied proper, and "Stop" shrieked the conductor. The effect was something akin to switching off the electric mains. Everywhere there was a cessation of all activities. The dancers, the man with the musical instrument, and the audience, reduced themselves almost to a basal state. My friend who was just on the verge of lighting his cigarette obeyed the order. His "fag" was not lighted but his finger still bears the mark. When Mrs. Krishnabhai Nimbkar said "stop" she meant it. She implied well enough that she would stand none of that tomfoolery. A few admonitions, and the rehearsal started from the beginning as if it were an imposition. It struck me then that this dominant person, instead of trying her hand at this direction of "*Brindavan*" should mount a charger instead of her modest cycle, with a sword and buckler in hand, instead of that portly leather bag

which though could conceal a large paper weight for a whole day without her knowledge. The rest of the dancers should follow her similarly equipped. Mrs. Nimbkar then would have given us a few real glimpses of the Rani of Jhansi, or Padmini of Chitur the flowers of Indian womanhood. Had I told her what I thought, I would have rubbed her the wrong way and made myself a mad bull in the china shop. She would have dealt with me as effectively as any capable matador. Still at her best, Mrs. Nimbkar is probably the exponent in the college of that dying art in women which made several of them famous warriors in history.

A few years back at a general body meeting of the college a resolution was sponsored by Mrs. Nimbkar that the lady representative to the college should be elected through that body of ladies. This was opposed by several of the fair sex led by an equally capable if not more able and garrulous lady. It was indeed a treat for the Gods to watch both the women debating on the platform. It was a case of hick meeting hack, a ten round Joe Louis—Max Baer or Tommy Farr fight minus fists. Mrs. Nimbkar's arguments that time I would not call them sound nor do I know any worthier people who do so. Though vanquished one can argue still, and for what she lacked in arguments she made up in several ways due to her excellent eloquence. It was just before the General Secretary's election, and the two opposing candi-

OBITUARY.



It is with deep regret that we have to record the demise of Dr. M. L. KAMATH, B.A., M.D., C.M., on the 7th July 1937 at his residence in Madras, so soon after his retirement from the Madras Medical Service in July 1934. He graduated from this College in 1904 after a distinguished career as a student. He was Professor of Physiology in this College during the year 1926-27 and Professor of Medical Jurisprudence during the years 1931-34.

dates had to come out on the platform for their own benefit. The wiser of the two steered himself clear of the Scylla and the Charybdis, but the other guy looked a regular ass between the two haystacks. If he offended Mrs. Nimbkar, the consequences would be only immediate, but by showing the red rag to her rival his sins would be on his head for life. He chose the milder course but he confessed that their debate and their dissention, nearly cost him his office, and that is by the way. The points were discussed for and against in all seriousness, and to the onlooker to a disgusting extent. Mrs. Nimbkar was losing ground mile by mile and the odds were hundred to one against her. Still she fought to the very end as gloriously as at the start. To such tenacity of purpose as she revealed, even her worst adversary should pay her the passing tribute of a sigh.

It was in those palmy days when we used to have rocking desks and tottering benches in the classes. A wave of compression if started at the top would easily reach the bottom. Mrs. Nimbkar first made a few mild protests punctuated with a few frowns. But they were of no avail. The edge of the desk caught her clean in the dorsal region more than once, and she could brook the nuisance no longer. She stood erect and gave a piece of her mind before the professor who was lecturing. That reminded me of Boadicea the British Warrior queen, who

"Bleeding from the Roman rods,
Sought with an Indignant mien,
The Counsel of her country's
Gods."

But the Professor, unlike the Druid priest, had the sense of the ludicrous

abundant in him "Madam" came the reply "Novelties die out. If desks and benches should suddenly get animated it is none of my fault. I suggest you sit there" he said pointing to the window "or over there" he continued with a finger towards the table, "or even here" showing his chair. At last Byron had to sleep a whole night to find himself famous. But the Professor became famous and a public hero as well before you could say Jack Robinson. For Mrs. Nimbkar there was the analogy of Mohamed and the mountain. The next day onwards she sought the last row,

'Far from the maddening crowds
ignoble strife.'

Any breach of the law or any over exuberance of spirits are so taboo for her that she nearly looks a Puritan. Anything of that type should meet with a reproof at once and if from her all the better. She has delivered sermons many a time and oft on such wide and varied subjects as from mountains down to mole hills. You may barrack or boo her it is all the same. Years of public work before she entered the portals of the *Alma-mater* have given her ample experience in facing mobs who are in no mood to listen. The theme is always more or less the same "sermons in stones, books in running brooks, and good in everything." So much so it is really wondered whether she talks with a sheer love for talking itself or to thrust home her points deeper. The repeated attempts to stop her harangues having failed the audience have taken her divers exodus into ethics in the spirit that what cannot be cured has to be endured. And they call her by the endearing name "Aunty" after the bunch of the aunties, the Gwenns, Peggies, and

Gustas who run their own corners in the several newspapers for the amusement or betterment of the children. But the nephews no doubt derive perennial entertainment and they look the least benefited for what all they have heard. If Mrs. Nimbkar should be an "Aunty" she ought to be really in a class with that aunt of David Copperfield, Betsy Trotwood, and not grouped with the cheap jacks.

A woman's cause is supposed to be man's. But for Aunty Nimbkar a woman's cause is woman's, pure and simple. She started the Women Medico's Club, on that fundamental principle. Its ideals may not convince one and all, but there it stands a glowing monument to Mrs. Nimbkar's capacity for organisation and taking pains.

One may wonder how this Puritan of Puritans allowed her ears to be boxed while she was blindfolded for a game

of blind man's buff at a mixed social gathering. Mrs. Nimbkar at home, in fact is the last word in hospitality. Approach her for some thing in her power she will reveal, that above all she is a woman, an understanding, and sympathetic one at that. It is indeed a study in contrasts!

Had she not joined herself to adorn the noblest of professions, her portraits by now would sell like hot cakes, and along with those of the other national leaders they perhaps might adorn the walls of almost every Indian home, or she would have at least got a seat in the Congress cabinet.

Yet I see that the day is not far off when she will be in the forefront of the struggle whether for the emancipation of disease or of Indian women or for the achievement of the nation's other ideals.

Mrs. Nimbkar is a personality, a tremendous one, with a capital P.

Me and the Dentist

(with apology to "Cosy Comer.")

Ever since the dentists date was made
I've been dejected and afraid.
His premises I wished caught fire
Burning to ash the gruesome chair.
No! he greets me with a casual air,
That's more than I could bear;
And he seems to be full of glee,
As though I had dropped in for tea.
And now that I was in the chair
I shivered with increasing fear.
I could not for life try to show
The tooth that created the row!
"Tis is all right," he says "I can see
This is the blacksheep, the fussy bee"
And with sharp steel goes picking round
A tooth that's absolutely sound.
So I splutter "that's not the one"
He answers "plenty to be done",
And makes a systematic mess
Of all the teeth I possess;
All the while talking away
He moves the horrid wheel my way,

And from a crowd delights to draw
The largest drill I ever saw.
The rest is hardly to be said.
Somewhere I remember to have read
Of needles driven in nail cleft,
Heating the end of what is left;
Of filing on the collar bone
While with a gag one cannot moan;
Of lynching; of screwing the thumb
Till it falls absolutely dumb.
And all the while, he, tip top style
Undermines my teeth in low guile;
Deliberately boring 'deep hole'
In teeth that were before quite whole!
With uprooted teeth strewn galore
When in pain and future fear I roar,
"Nay, sir, easy easy" he says,
"All your sound teeth are in their base;
And if still you are so depressed,
Hug this reflection to your breast
'That some poor devils after all,
There are, who've got no teeth at all!'"

T. K. N.

An Alliterated Anecdote.

Alexander *alias* Arthur, an able
Austrian airman attempts an altitude
alone!!

After an arduous attempt, an
Albaiboss (an Austrian aeroplane)
attracted Arthur's attention and
approval. Arranged as appropriate an
April afternoon Arthur ascended
amidst an applause and after ably
attaining an actually admirable alti-
tude, appeared anxious and attempted
alighting at an airpost again.
Anyway Arthur alighted around an
apparently amicable area—Aboriginea
Aborigines assembled all around and
admired Arthurs Austrian appearance
and aeroplane as abnormalities. As
airmen always anticipate accidents,
Arthur, alike, adopted an amicable
attitude and attempted appearing
almost as always, ably avoiding an
anxious appearance. After all, Abori-
gines appeared affable and amicable
and Arthur accordingly accepted
alliance.

After admiring all agrestic
aesthetics abounding Aboriginea, an
acute appetite attacked Arthurs
abdomen. After ablutions Arthur
accepted aboriginal alimentations: ate,
alternately, apples and apricots and
allayed appetite. After alleviation,
as anticipated, antique activities
around and about afforded ample
amusement.....

After administering all available
aid, Aborigines accepted Arthur's
announcement about aeroplaning
Austriawards again. Accordingly,
another April afternoon Arthur
arrived at Austria, all Austrians
applauding Arthurs achievement aloud.

Airminded Arthur accepted all as
an able accomplishment among
Austrian aërial annals.

MOHAMED TAJUDIN.

Happy Days.

(It has been proposed to abolish lectures in the final year class.)

1. What brighter days in store for me
In final M. B. class
For every noon will I be free
Until the day I pass.
2. What Rose and Careless, or Beaumont says
I'll master from the book
And need not watch Professor's face
For hours with wiser look.
3. And when his patent jokes are on
To make us happy be;
I will not have to hide the scorn
With counterfeited glee.
4. Now it is so hard to slumber deep
Asitting on the bench;
And if by chance I fall asleep,
My neighbour's sure to pinch.
5. When cruel summer sun is hot
In final M. B. class,
I'll snore and snore upon my cot,
And still I hope to pass.

A.

Brain-Brightners.

CONDUCTED BY

THE BIN THE BONNET.

- I. Who were the medical men who discovered in Africa
(a) The Niger River?
(b) The Victoria Falls?
- II. Who was "Priapus"?
- III. For what were the following medical men famous for
(1) Ambrose Pare
(2) William Prout
(3) Robert Lawson Tait?
- IV. Who produced the first Pharmacopoeia?
- V. Who was the teacher of Medicine who became a Pope?

(For answers turn to page 58)

The Magazine Committee Prizes.

The prizes of the Magazine Committee for the year 1936-37 were awarded to the following persons:—

Name	Value Rs.	Purpose
(1) N. Money, Final year.	20	First prize for the case report on Gonococcal Septicæmia.
(2) K. Ramakrishnan Thampi, Final year	10	2nd prize for the case report on Aortic Stenosis.
(3) D. J. R. Snow, Final year.	20	Prize for the best general article "The Puff that cheers."

The prize for the best caricature was withheld as no good caricature was sent by any student. Dr. R. V. Rajam, M.B.M.S., M.R.C.P. and Dr. N. S. Narasimhan, F.R.C.S., were the judges.

K. N. ALVA,
Secretary and Publisher.



“THE OLD MIDWIFE”

[Replying to an ovation and welcome from the students, our new
Principal said “Now as before consider me as ‘The old midwife.’”]

Smile a While.

"You write in too solemn a way young man" said the editor to the new reporter "Try to be more crisp and humorous in your style". That evening a fire broke out in a butcher's shop in the town and the new member of the staff reported as follows:—

"Mr. William Busket, the well-known butcher, has been losing flesh rapidly of late."

—
The teacher was talking about the dolphin and its habits.

"And children" said she impressively, "just think! a single dolphin will have two thousand baby dolphins!"

"Goodness!" exclaimed the little girl at the foot of the class. "And how many do the married ones have?"

Popular colour.

A Doctor declares that green soothes the nerves. Especially if it is on a nice crisp piece of paper with the Government of India on it.

Explained

A psychologist says it is possible for a person to train himself to wake up at any hour in the morning he wishes. This is known as the 'triumph of mind over the mattress.'

A physician attending to an old lady who had a severe cold asked, "Did your teeth chatter when you felt the chill coming over you?"

"I don't know doctor; they were lying on the table" was the pleasant reply.

Served well

At a dinner a girl happened to have a doctor sitting on either side, one of whom remarked that they were served well since they had a duck between them.

"Yes" came a rejoinder from the girl "And I am between the two quacks."

—
Slim girls are often generous natured, a psychologist remarks. Yes, easier to get round of course.

—
Being a wife is a whole time job
Being a husband is a fool time one.

—
"Mountaineering makes one sleepy," asserts a writer. Perhaps the yawning precipices have something to do with it.

—
Some women prefer a man with a past; but all women like one with a present!

Brain-Brightners (ANSWERS.)

I. (a) Mungo Park.

(b) David Livingstone.

II. The Roman God of procreation from whose name such terms as priapism are derived

III. (1) The 16th century French field surgeon who was the first to employ ligatures in arterial haemorrhage.

(2) English physiologist (1785-1869) was the discoverer of free hydrochloric acid in the stomach.

(3) The first operation for ruptured ectopic gestation is credited to R. L. Tait. English gynaecologist in 1883.

IV. The Arabs.

V. Gerbert d' Aurillae, who was long an active teacher of medicine at Reims, was later Pope Sylvester II (999-1003 A. D).

Report of the Graduates' Reception

The reception to the graduates was held this year on 10th August at 5-15 P.M. in the College Hall.

Dr. A. Lakshmanaswami Mudaliar B.A., M.D., F.C.O.G., Principal, Medical College, presided over the function. Hon'ble Dr. T. S. S. Rajan, M.R.C.S., L.R.C.P., Minister for Public Health, addressed the graduates.

The function was a memorable one. There was a record gathering of students, members of the staff and other prominent people. Among those prominent apart from the staff of the College, were Lt.-Col. K. G. Pandalai, Major K. C. Chako, Mrs. Chako, Capt. and Mrs. Thimmaya, Lt.-Col. Mahadevan, I.M.S., Capt. Meyers, I.M.S., Dr. N. Venkataswami Chetti, Mr. and Mrs. Fernandez, Mr. K. T. Alva and Mr. S. P. Jayarama Nadar. The outgoing graduates were greeted at the entrance by a triumphal arch according them a hearty welcome into familiar scenes and surroundings.

A special feature of the function was the joyous spirit of nationalism that pervaded the atmosphere. This was quite evident as it is well known to all that the General Secretary is one imbued with lofty nationalistic ideals. Most of those assembled displayed the tri-colour national flags in addition to the button holes.

Sumptuous tea was served on prettily decorated tables on the adjoining lawn. The vast gathering then proceeded to the spacious College Hall which was gaily decorated and wore a festive appearance. Placards with slogans of "Permanent Hostel," "We

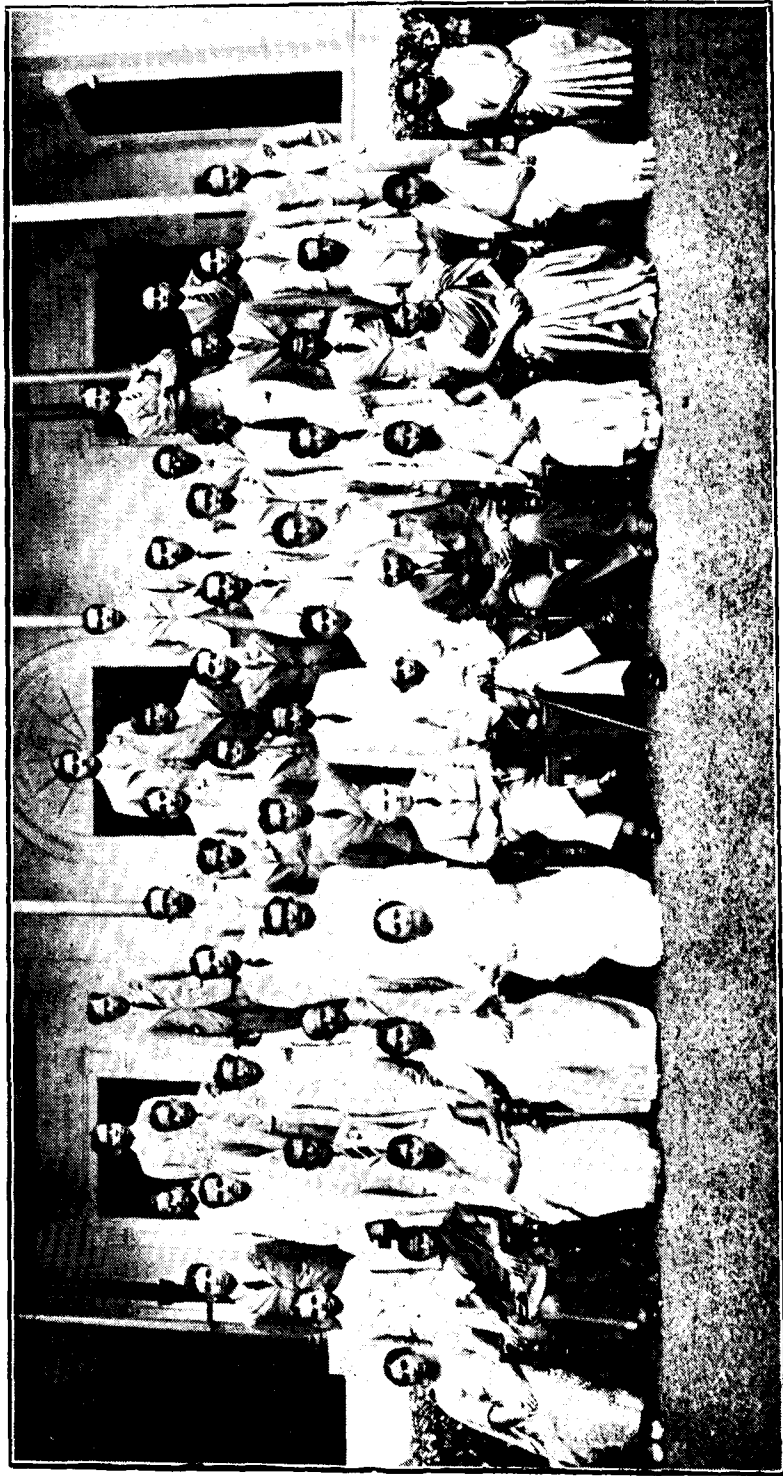
want the Hostel," "Bus for the lady students," "Properly equipped Common Hall," "Old Boys Association" were prominently displayed in the Hall.

The proceedings began with prayer. Mr. K. N. Alva, General Secretary of the Medical College Association proposed Dr. A. Lakshmanaswami Mudaliar to the chair. Drs. A. L. Mudaliar and T. S. S. Rajan were then garlanded with huge tricoloured national garlands.

President's Introductory Remarks.

Dr. A. Lakshmanaswami Mudaliar, Principal, presiding over the function, congratulated the students on the excellent arrangements they had made this year and said that it was a happy augury of the exceedingly good comradeship that existed in the College as befitting the noble profession which they would soon enter. It was a matter for gratification for them that larger number of students were being turned out every year. He was sure that in spite of distressing moments there were occasions when they could occupy themselves in the service of humanity and carry the torch of knowledge to the remotest parts of the country.

Proceeding, he observed that that particular occasion was unique for more reasons than one. They had had Ministers, Executive Councillors and other distinguished members of the medical profession to address them. This was the first time when they



Group Photo Taken on the occasion of the Reception to the New Graduates on 10-8-'37.

had the proud privilege of having as their Chief Guest to address them, a person who combined in himself all noble qualities of the profession and held an exalted office in the Government of the province (cheers). He extended a cordial welcome to Dr. T. S. S. Rajan and said that their hearts were full, because after very many years it had been possible for the Madras Government to have as the Minister for Public Health and Medicine one who knew what he had to deal with. The advice coming from that quarter was always welcome and the advice would be given by one who had effaced himself and carved out a place in the country and profession and who had set an example of what the future of the medical graduates should be like.

The Minister's Speech,

Dr. T. S. S. Rajan in the course of his address after thanking them for the hearty reception said that he found that the evening's function had been made purposely pleasant for the reason that the graduates were going to launch into an unknown region which would open to them a beautiful vista of life. While wishing them well in their future, he would like to tell them that the Government would not be in a position to employ every one of them, service conditions and opportunities being very limited. They must understand the limitations of government service. But if they had the energy, push, and grit to fight the battle of life, service would go to them. This advice he was giving them as a practitioner of over thirty-three years' standing, having started life as the meanest of the mean, as a hospital assistant getting a princely salary of Rs. 25 per month. They had now greater facilities and he therefore wanted them to be cheerful, joyful,

healthy and happy and to have enthusiasm and optimism while entering the battle of life.

He was one of those who never believed that the medical profession in this country was overcrowded and if any one told him that the profession was overcrowded he would laugh at his ignorance. But there was one unfortunate feature in medical education in this country in that it was very expensive and out of all proportion to the general level of life in the country. Compared with the poor man in the village, who was economically non-existent, medical students had become costly. They had put a good deal of capital in the bargain, leaving alone the State contribution. They should not imagine that they had not cost the government a good deal of money, which they should remember came from the poor tax-payer. Having got the poor tax-payer's money to help them in their education, they should not grumble to go to the villages and serve them.

Honest Life.

When they go to the village, they should not go with their suits and ties and turban and boots. If they did so, they would become an object of curiosity. The education that they had seemed in a way to make them unfit for service among the villagers. They should not think that the fifteen or twenty thousand rupees they had spent on their education should be got back and if they thought so, he could assure them that they would never succeed in their profession. Medical knowledge should not be valued in terms of rupees, annas, pies. They should make this knowledge serviceable to the people and through this service and the appreciation of the people they should secure the wherewithal for an honest

lift. They should have no complaint to make. He would like every one of them to start small but start well. He would also like them as practical young men to take practical training for, say six months or one year, and with the experience and knowledge gained, they must be able to prove to the villagers that they were worthy of their education. If they were successful and wise they would make their mark in the profession. If they were not able to tackle cases themselves, they should not get frightened and they would not get frightened if they had knowledge.

A Warning.

Proceeding the Minister warned the graduates of one thing. They might be extraordinary clever. They might have a good amount of practical knowledge. But these were not enough; for medical service was more than mere prescription, and surgical knife. It was really a human science unless they knew the condition of the patients going to them they would be a failure. They should know human nature, and how to deal with an ailing man. They should show sympathy and practical understanding. Knowledge was, of course, essential but without the art of understanding human nature they were bound to fail. That was not part of the lesson taught to you at present, and human psychology should form part and parcel of medical curriculum.

Turning next to the lady graduates, the Minister said that he was glad more ladies were taking to medical education and coming up in the profession. There was dire need for women doctors because women desired to be helped by only lady doctors. He particularly congratulated the Muslim lady graduate who had come out successful. She was the pioneer in her community and it was hoped that

she would be able to induce more Muslim ladies to take up the profession.

Spirit of Service.

Concluding the Minister said that he wanted them to feel proud that they were servants of humanity. You may get money, you may have places, you may have roaring practice but if the spirit of service is not in you as far as country is concerned, you are a dead person. If you want to make yourself felt, you must do service and the spirit of sacrifice must be inherent in a medical man. In war, in peace and in time of epidemics, play your part gallantly, and like men. If necessary you will have to give up your life. On the sacrifice you make will grow vigorous life. The more you serve humanity the more you create strength, ability and power to do more service. That is life."

He exhorted them to fight the battle of life like honest men and women in a straight, clean way.

Adverting next to the placard prominently displayed in the hall drawing his attention to the need for a medical hostel, the Minister said that no doubt they required a hostel.

(A Voice: When?)

He did not know when. It depended upon other persons and things over which he had no control. He would go abegging to the Finance Minister and do all he could in the matter so that they might have a hostel worthy of the name (Cheers).

Dr. N. Ramanathan replied on behalf of the graduates. They belonged to a college which had produced such distinguished persons as the late Dr. M. A. Ansari, the late Dr. S. Rangachari and Rao Bahadur Dr. Lakshmanaswamy Mudaliar, the present Principal. When such names were associated with the college was it any wonder

"A" Coy. (Medical)



5th Madras U.T.C.

Mounting Cup, 1936.

Winners of the Guard



Standing.—L/Cpl. John E. Koshy, Cdt. Seetharaman, U/O. Khaleeli, U/O Rajagopal, L/Cpl. K. V. Pillay, Cdt. Bhavadas.
Sitting.—Sgt. Dhivar (Guard Commander), Lieut. K. S. Viswanathan (Officer Commanding 'Med. Cont.') 2nd Lieut. N. Chandrasekharan,
 L/Cpl. Viswanathan (Guard Corporal)

Sitting on ground.—Cdt. Madanagopal, L/Cpl. Haridas, Cdt. Rangara.

that they were proud of it? He could not, however, say that the life they spent in college was always happy, as they had to face many disadvantages, including the absence of a hostel and good places to live in. This defect had been in existence for over a century. The Minister had promised them a hostel. But promises had been made in the past, on similar occasions, and a deputation had waited on the previous Minister but nothing had been done.

A voice: There is a change in the Minister.

Proceeding he said that they were sure the present Minister would keep his promise and would earn the gratitude of generations of students if he would give them a happy place to live in. The future was gloomy and private practice was discouraging to a beginner. When they had to meet the ignorance of illiterates, junior practitioners looked for encouragement from senior practitioners. There should be a policy of live and let live and the seniors should come to their help. There were, besides no proper facilities for research work and it was necessary that private practitioners should be given post-graduate training to improve their knowledge. There were men and material and yet there was no encouragement for research in the field of medicine and he would therefore appeal to the authorities to do what was necessary.

The President's Remarks.

Dr. Lakshmanaswami Mudaliar announced that the Minister had been pleased to declare Wednesday as a holiday to the students. He felt sure that the advice of Dr. Rajan which was borne out of his experience of human nature would be remembered by the students. He felt that the medical profession in South India was

in need of good leadership. Although he did not want to cast any reflection, he hoped that Dr. Rajan's accession to the responsible post would be more and more in evidence in every one of their activities. The Minister had a great programme for the reorganisation of the Medical Department and medical profession. He hoped that the Minister would give to the young men opportunities to develop to the fullest extent their character, grit, capacity and intelligent and humanitarian outlook. The Principal said that the Minister had thrown a hint that psychology would probably be made a compulsory subject and hoped that it would be made compulsory in the case of new entrants.

An interesting programme of variety entertainment was next gone through. Orchestra, geethar and mouth organ, and cornet solo by the military students were well appreciated. Cabaret (English dance) by the lady students was of high standard. The Tamil farce 'Sabapathy' was a scream. Mr. S. G. Rajagopalan as Sabapathy did some talented acting and was all through irresistible, producing many bouts of laughter from the whole audience.

'Brindavan' a classical dance by the lady students drew praises from all sides. There were items including other English, Tamil, Hindustani songs, and an English farce. The "Home Council," scene 1, gave a nice introduction to "Home Council", Scene 2, depicting the Madras Assembly in session. The House considered in all seriousness the question of the provision of a hostel for gent students and of a bus for lady students. This item kept the audience spell bound and was appreciated most.

The pleasant function terminated with a vote of thanks proposed by the General Secretary Mr. K. N. Alva.

Association Notes

The first General Body meeting of the College Association for the year 1937-38 was held on 14-7-1937 in the Common room at 1-30 P.M. Lieut.-Col. C. M. Plumptre, I.M.S., presided.

The minutes of the previous General Body meeting held on 12-3-1937 read by the General Secretary was approved.

Three condolence resolutions on the death of Dr. M. L. Kamath, Mr. T. Dandapani and Mr. K. I. Poulouse were moved and passed. Two minutes' silence was observed all standing, in memory of the deceased.

Election of office-bearers for the year:

Vice-Presidents.

Dr. M. R. Guruswami Mudaliar, B.A., M.D.

Dr. A. Lakshmanaswami Mudaliar, B.A., M.D., F.C.O.G.

Hon. Treasurer.

Dr. K. N. Krishnan, B.A., M.B.B.S.

Magazine Committee.

President.—Dr. R. V. Rajam, M.B., M.S., M.R.C.P.

General Editor.—Dr. N. S. Narasimhan, F.R.C.S. (ENG. & IRE.)

Associate Editor.—Dr. K. N. Pisharoti, M.D., D.T.M., M.R.C.P.

Student Editors.—Mr. T. K. Narayan, Miss J. Asirvatham.

Assistant Secretary.—Mr. P. V. Sundaram.

Sports Secretary.—Mr. M. Soma-sundaram.

Captains for the College Teams.

Hockey—Mr. F. J. Orton.

Foot-ball—Mr. S. R. Viswanathan.

Cricket—Mr. A. V. Rajagopalan.

Boxing Club—Mr. R. L. Hughes.

Tennis—Mr. Vincent De Bayliss.

Track and Field events—Mr. B. J. Pereira.

Lady Sports Secretary—Miss Lilavathi Bal.

Class Representatives.

Final Year—Mr. M. Shamsuddin.

Fourth Year—Mr. G. Raghunandan.

Third Year—Mr. R. Ananthanarayan.

Second Year—Mr. P. Mathias.

First Year—Mr. T. K. Jayaram.

Pre-Registration—Mr. D. Jagannathan.

Military Students—Mr. D. J. R. Snow.

Lady Students—Miss G. Buultjens.

Medical College Magazine

A resolution placing on record the very valuable services rendered by Lt.-Col. K. G. Pandalai, F.R.C.S., I.M.S., as the President of the Magazine Committee from its very inception was passed.

Another resolution recording the very useful services rendered by Dr. K. S. Viswanathan as Treasurer of the Association and Magazine Committee was also passed.

With a vote of thanks to the President the meeting concluded.

The members of the Madras Medical College Association assembled in the College Hall on Wednesday, 4th August 1937, to congratulate Dr. A. Lakshmanaswami Mudaliar, B.A., M.D., F.C.O.G., on his appointment as Principal, and to bid farewell to Dr. K. S. Viswanathan, B.A., M.B.B.S., B.S.Sc., proceeding to America on Rockefeller scholarship. Dr. M. R. Guruswami Mudaliar, B.A., M.D., presided on the occasion.

This was the first occasion when a meeting of this Association was attended by practically all the members. Mr. K. N. Alva made a short speech congratulating Dr. A. L. Mudaliar on his well merited appointment. He said the appointment was noteworthy in the fact that in addition to being the first Indian to occupy this coveted position, he was also one of the most distinguished Old Boys of this College. The Principal made a suitable reply.

Then the Secretary, as the Warden of the Medical College Students' Hostel thanked Dr. K. S. Viswanathan for the valuable services rendered by

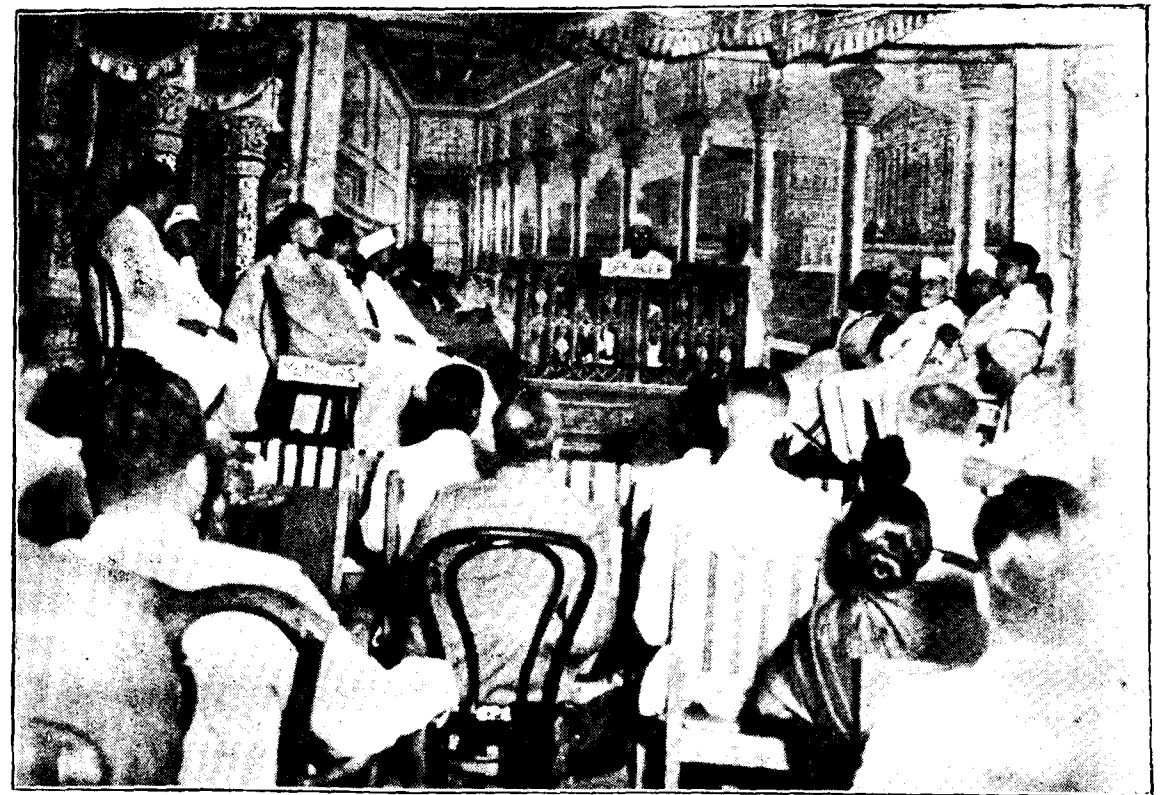
him as Treasurer of the Hostel. Mr. M. Shamsuddin referred in glowing terms to the various activities in the College with which Dr. Viswanathan was connected. In his reply Dr. Viswanathan thanked the members for the feelings expressed. With a few remarks from the chair the meeting came to a close.

* * *

Under the auspices of the College Association the Graduates' Reception was held this year on 10th August 1937.

Dr. A. Lakshmanaswami Mudaliar, the new Principal and a very facile orator presided over the function, while the new graduates were addressed by Dr. T. S. S. Rajan—a member of the noble profession holding an exalted office in the Government of the Province.

A group photo of the graduates was taken exactly at 5-15 P.M., Tea was served at 5-20 P.M. and the meeting commenced at 6 P.M. The variety entertainment programme was quite elaborate and the function terminated at 9-35 P.M. I think, I ought to feel legitimately proud as I learn that this year's function was an unparalleled success considered from any aspect. This was mainly due to the happy and willing co-operation received by me from all quarters. Our aim from the beginning was to have something new wherever possible—to change the old order and give place to the new—a change for the better. The variety entertainment revealed a lot of enthusiasm and originality on the part of the hosts who entertained the guests. There were new talents on the stage. Some of the folk with their stock in trade who used to be a common factor every year were rele-



Scene from " Home Council "—representing the present Madras Legislative Assembly.
(Enacted for the Graduates' Entertainment.)

gated to the corner. In this connection, a notable addition this year to the College Hall is to be mentioned—a permanent stage, for which, as also for the many welcome changes and additions seen in the College, we should be very thankful to Dr. S. Ramakrishnan. I take this opportunity to tender my grateful thanks to all those who have contributed to the successful getting up of the function. It will also be appropriate to quote here the words of our beloved Principal who presided over the function,—

“I congratulate the students on the particularly excellent arrangement they had made this year which is a happy augury of the exceedingly good comradeship that exists in the College as befitting the noble profession which they would soon enter.”

K. N. ALVA,
General Secretary,
Medical College Association.

Roll Call of Honour.

The College Council has made the following recommendations for the award of prizes and honours certificates.

1. Johstone Gold Medal for the best outgoing student—N. Ramanathan, M.B.B.S.

2. Viceroy's Medal for the best outgoing Lady student—Miss Z. Ramakrishna Amma, M.B.B.S.

3. Raja Sir Savalai Ramaswami Mudaliar Gold Medal for proficiency in Midwifery and diseases of women and children.—N. Ramanathan, M.B.B.S.

4. Lady Grant Duff Gold Medal to the best Hindu woman outgoing student — Miss Z. Ramakrishna Amma.

5. Bannerman Gold Medal for Bacteriology—Mr. P.A. Paul 4th year.

6. Maitland Memorial Prize for proficiency in Clinical Surgery—P. K. Doraiswami, M.B.B.S.

7. Branfoot Memorial Prize in Midwifery and Gynæcology (by competitive examination)—N. Ramanathan, M.B.B.S.

8. George Smith Prize in Pathology—Mr. U. Mohan Rao, Final year.

9. The McNally Memorial Prize in Hygiene—Mr. U. Srinivasa Rao.

10. Dr. G. V. James 1st and 2nd Prizes to Mr. U. Mohan Rao and to Mr. Srinivasa Rao respectively for proficiency in Principles and Practice of Surgery.

11. D. Samuel Jesudoss Prize in Pharmacology—Mr. P. A. Paul, 4th year.

12. The C. Raitt Dunhil Prize in Physiology—Miss B. Shambavi Bai.

13. The Thompson Memorial Prize for best student in Anatomy from

Travancore (by competitive examination)—Miss C. Chandramati Amma.

14. The Van Geyzel Prize in Inorganic Chemistry—Mr. A. Balasubramanian.

List of Honours Certificates.

Inorganic Chemistry—

1st Miss P. K. Devi

2nd A. Balasubramanian

Biology—

1st C. Balakrishnan

2nd Miss P. K. Devi

Organic Chemistry—

1st Mr. G. W. Bird

2nd Mr. C. Gopalan

Anatomy—

1st Mr. M. Mahadevan

2nd Mr. A. J. P. Ralston

Biochemistry—

1st Mr. R. Ananta Narayana Iyer

2nd Not awarded

Pharmacology—

1st Mr. P. S. Visvanathan

2nd Miss Josmin Enoch

Bacteriology—

1st Mr. K. P. Anandan

2nd Mrs. Kamalam M. Menon

Pathology—

1st Mr. U. Mohan Rao

2nd Not awarded

Hygiene—

1st E. J. F. Rebello

2nd Mr. U. Mohan Rao

Principles and Practice of Surgery—

U. Mohan Rao and U. Srinivasa Rao

Dental Surgery—

1st U. Mohan Rao

2nd U. Srinivasa Rao

Women Medico's Club.

The Women Medico's Club celebrated its third anniversary on the 20th March 1937 at Walaga Bagh Hostel. There was a large gathering including both old girls and present students. The function began at 2-30 in the afternoon with sports which was conducted by the Sports Secretary in a well arranged manner. Cycle race, Hurdles, Obstacle race, Long jump, etc., were some of the items and it was a pleasant thing to see everybody participating. This was followed by tea. The business meeting commenced at 5 P.M. presided by Dr. Miss Thomas who distributed the prizes to the winners.

The Secretary presented the annual report and the function closed with a vote of thanks to the Chair.

Annual Report 1936-37.

I have great pleasure in presenting the third annual report to all of you gathered here this evening.

The activities of the year consisted of the following:—

A party to the freshers and the election of the Committee members was held in July 1936. It was decided that the subscriptions be reduced from Rs. 4 to Rs. 3 for the present students and from Rs. 7 to Rs. 5-8 for the old girls and also if any member wanted to resign from the Club She should pay Rs. 2 before sending in her resignation.

We had only one 'Games and Social' day, in October, and as there was very little response from the members, we did not venture to have any more this

term. We are very thankful to the Sports Secretary for all her kind co-operation and help.

We had one General Body meeting and four Committee meetings during the year. The old girls' day and Graduates Reception was conducted on a grand scale. Mrs. S. Philip presided and Dr. Muthulakshmi Reddy addressed the new graduates. We had sent invitations to about 100 of our old girls who were all scattered far and wide. We were very eager to see the Doctors' section start with all vigour and enthusiasm. But to our great regret very few responded to the invitation. The whole affair was a disappointment and the expense of it told heavily on our purse, but still we are not going to give up hope as these failures are only stepping stones to success.

We could not hold any general talks or lectures as there was not enough time at our disposal. In spite of it we approached certain people especially our College staff members to address us but they flatly refused.

The Club went on a picnic to Avadi in January. We were quite a good number and we had a very pleasant to and fro journey in the train. Our thanks are due to Mrs. Lakshmipathy for allowing us the use of her gardens and also for all the arrangements she had made for us. After tea we had a ramble all over the place followed by a moonlight dinner over which we had to hurry for fear of missing the train.

The Club has been negotiating with the Government with regard to the

Medical College Magazine

bus and the erection of the Common Hall and I am glad to say that we are successful in this direction as the previous Secretary had hoped for. The Common Hall is sanctioned and the work has been entrusted to the P. W. D. As regards the bus we hear that we are getting one by the reopening of College after Summer vacation. Our profound thanks to the Principal and Assistant to the Principal for all the help they have rendered us in our various activities especially with regard to the Common Hall and bus.

I have just to wind up by thanking on behalf of the Committee all the members for their very kind co-operation in participating in all the functions and making them a thorough success. My personal thanks are due to the treasurer, lady representative, Sports Secretary and the Committee members.

The statement of accounts as given by the treasurer is as follows:—

<i>Receipts.</i>		Rs.	A.	P.
Subscriptions from students	172	0	0	
" " old girls	14	0	0	
Balance from last year in hand	...	43	1	5
Balance in Bank	...	58	6	0

	Rs.	A.	P.
Donation from freshers	...	3	0 0
Subscription for picnic dinner	...	4	12 6
Last year's arrears	...	20	0 0
Stove hire	...	1	0 0
Total	...	316	3 11

Expenditure.

Fresher's Party	...	26	14 0
Graduates Reception	...	102	1 3
Games and Socials	...	3	1 2
Picnic	...	46	4 3
Hostel Bill for final year's party last year	...	18	9 9
Crockery	...	9	4 0
Stationery and Postage	...	7	1 0
Typing	...	4	0 0
Club Anniversary	...	33	2 0
Refund	...	1	0 0
Total	...	251	5 5
		316	3 11
		251	5 5

Balance	...	64	14 6
Interest	...	1	6 5
		66	4 11

MRS. KAMALAM M. MENON,
Secretary, Women Medico's Club.

REVIEW.

Handbook of Laboratory Medicine "Blood" by Dr. D. Govinda Reddi, M.D., Assistant to the Professor of Medicine is a neat little brochure which is heartily recommended to students and practitioners. It is priced Rs. 2 for students and is available in the Clinical Laboratory.

"OUR EXCHANGES".

1. Madras Medical Journal.
2. The Burma Medical Times.
3. Medico-Surgical Suggestions.
4. Medical Digest—(May and June Nos.).
5. The Sind Medical Journal.
6. The Indian Journal of Venereal Diseases.
7. National Medical College Magazine (Bombay).
8. Lucknow Medical College Magazine.

NOTICE

Contributions to the next issue of the Magazine should reach the Editor by the 25th of October.

EDITOR,

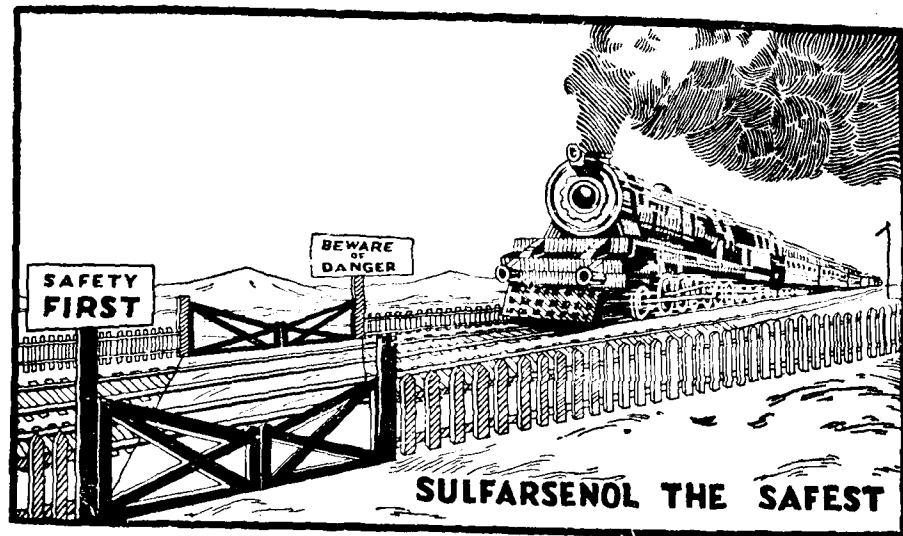
The Madras Medical College Magazine.

Varicose Veins.

Apparently the incidence of varicose veins is definitely increasing. Whether this is due to changing living conditions, or to definite changes within man's organism, would be difficult to say.

The new injection treatments, which obliterate the involved ~~surface~~ vessels, have been a distinct boon to both patient and physician and are extremely successful in a great majority of cases.

However, in some cases injection may need to be postponed for a time and palliative treatment instituted instead. In other cases, where injections are done, there is a good deal of pain and inflammation at and around the site of the injection. In both instances Antiphlogistine dressings are of great value. Used as hot as can be tolerated, and extending over and well beyond the site of the lesion, the results are frequently immediate and very striking.

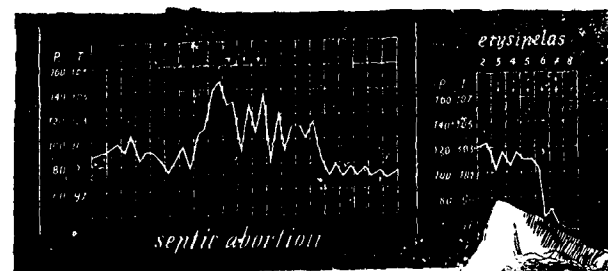


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Sodium Chloride (1.8 grs.)

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