The Madras Medical College Magazine

Editor :
N. S. NARASIMHAN,
F.R.C.S. (Eng. & Ire.)

Vol. XVII
No. 4.
JULY, 1938.

When writing to advertisers, please mention this Magazine.

The Madras Medical College Magazine.

GENERAL EDITOR

N. S. Narasimhan, F.R.C.S. (Eng. & Ire.)

Vol. XVII, No. 4 **JULY 1938.**

THE MADRAS MEDICAL COLLEGE MAGAZINE

Published under the auspices of
The Madras Medical College Association

Contributions are invited from members of the Medical Profession. All communications should be addressed to :—

The Editor, **Medical College Magazine, Madras.**

The Madras Medical College Magazine.

Vol. XVII. July 1938. No. 4.

CONTENTS.

"Pathology is the Breath of life to Clinical Medicine"

W. H. Maxwell Telling had been trained in the School (Guy's Hospital, London) which had carried on the traditions of Bright, of Addison, of Hodgkin, and of Willis.

His clinical teaching was broad-based on the sure foundation of a wide and intimate knowledge of morbid anatomy.

In his own words "Pathology is the breath of life to clinical medicine. Upon it we rely more and more, both for data and for inspiration. . . . . There is more solid medicine to be **understood** in the post-mortem room than in either wards or out-patients, taken separately."

As a physician, he was an honorary pathologist to the hospital, responsible for the performance of post-mortems once a week. It was a delight to see him at work in the post-mortem room. His thoroughness, his enthusiasm, his lucid and forceful expositions were at once a revelation and an incentive to the new comer.

As a clinical teacher, he excelled. Thoroughness in the investigation of cases and accuracy in the recording of findings he insisted upon, and the summaries of which he was accustomed to dictate to house-physicians or clerk when patients were discharged (or died) were masterpieces of succint yet comprehensive statement. In the post-mortem room, similarly, he liked to have a "pathologist's commentary" on every case in addition to the anatomical diagnosis.

LT.-COL. M. M. CRUICKSHANK,
D.O.M.S., M.D., M.Ch., F.R.C.S., I.M.S.,
Professor of Surgery and Superintendent,
Government General Hospital,
who was recently elected as a
Fellow of the Royal Society of Edinburgh.

The Madras

Medical College Magazine

VOL. XVII. | JULY 1938. | No. 4.

Hero-Worship in Medicine.

BY T. S.

Medical men are unanimous that their profession is easily the noblest of all. They probably believe that nobility and wealth are incompatible. It is perhaps for this reason that they are encouraged and exhorted to be poor. You may call it self-sacrifice. I wonder how many of us really believe in all this. Probably a foolish few. Sentiments expressed in the public house are not to be seriously repeated in private. But, whether we believe in nobility or the utility of self-sacrifice, we all believe that we are heroes.

The country doctor, in Madras he is called the subsidised rural medical practitioner, is pictured to us as a lone man with a loving wife and devoted family carrying on the work of relieving suffering and rescuing from death the innocent victims of disease and accident He carries on his work day in and day out with joy in his face and cheer in his voice but perhaps curses under his teeth. He is out on his rounds, far and near, in blazing sun and pouring rain; also in the face of sleet and snow, though I have not seen this here. What could be more heroic than this? I cannot think of anything, except it be the future honorary assistant medical officer, passing rich on thirty rupees a month, equipping himself with all the latest methods of modern medicine with a grim determination to stamp out disease and death so that his country might speedily take her rightful place in the race of non-imperialistic independent nations.

One wonders why Carlyle, who picked out garrulous poets and gouty prose-writers to be held up as heroes, never thought of medical men as fit subjects for his prose and parenthesis. As he himself says, circumstances change the form of great men. I am sure, if he were now alive, he would surely have included in his list of heroes the subsidised rural medical practitioner or the honorary assistant medical officer who is expected to go through a three hours' stoop dressing wounds in the out-patient department of the Government General Hospital.

Anyway I shall leave this to a future Carlyle. I hope when he comes somebody will erect a statue for him. It is difficult to suggest a site. What about the Stanley Viaduct after it is made safe for heavy traffic? Well, if

this site be found unsuitable after the statue is planted, the site may be shifted. Nothing lasts. No, not even the Madras Medical Service.

It is not of this that I started to write. Medical men never waited for a Carlyle. They have their own heroes. They never waited for the Pope to canonise them. They have created their own saints except probably St. Chrysostom. I do not know whether all the great men of medicine are heroes or saints. I think we call them gods or fathers. Æsculapius was of the gods, so were the Asvinis. Hippocrates was of the fathers, so also Charaka and Susruta. There does not seem to have been any Eve in medicine. It is difficult, therefore, to understand where the serpent comes in. I remember to have read somewhere a learned dissertation on the place of the serpent in medicine. I forget its exact role. But I know this, that some prescription-writers cannot even draw a decent snake at the top of their prescriptions.

Coming to nearer times there were great personalities like Hunter, Harvey and Jenner, Lænnec and Skoda, who had each in his own way dominated medicine. Even to-day, no medical student finishes his education without ample opportunities of learning something about the lasting work of these great men of medicine. True, no temples have been erected. In religion they set apart a day in the year to celebrate the memory of a saint or a god. Much akin to this we have our own feasts. Periodically the great medical associations have yearly orations in the name of their great men, the Hunterian and Harveyan orations.

If every medical man is a hero, it is difficult to understand why only certain names are remembered and the rest of them confined to forgetfulness. Those must be really superheroes. They must have done something outlandish, like running after dairy maids, or being in league with resurrectionists. People should have whispered in derision and ended with shouts of applause. It would be very useful if some one could give us tips as to the proper exercises which may make us all super-heroes. I wish I could. I might just give certain illustrations. You may stand upright, throw your chest forward and talk valiantly against constituted authorities or group of men who may for the moment be unpopular. You will become a hero instantly. But, please do take care, that you are all the time on the good side of those whom you criticise in public. If you are a little timid, you may fish in sewers for bacteriophages That is likely to give you fame enough to find a berth in the realm of heroes.

All of us fortunately cannot become heroes. But most of us can worship heroes—genuine worship and not the make-believe kind, as some people do who erect images of a deity in the compound of their houses or in the corner of the hospital premises. Those who successfully worship their heroes, are surely on the way to become heroes themselves. For those who have not been observant, I might give a few suggestions. If you find a hero hesitant in speech, you worship him by practising a little stutter on proper occasions If you find that difficult, you might wait for him when he enters the operating room ready to put the apron on him. If your hero is silent on a week day, you might do so bi-weekly. I think it is a difficult job. For medical men, students particularly, are rather boisterous in private, though they are very mute in the wards.

Dr Rangadurai

Diagnosis and Significance of Cardiac Murmurs.

BY S. K. SUNDARAM, B.A., M.D.,

Medical College, Madras.

To the undergraduate in medicine cardiac murmurs have an importance out of all proportion to their real significance to the patient. This is rather unfortunate. It may be that accurate timing and location of murmurs reflect the capacity of the student for accurate observation. But there is no doubt that over-emphasis on murmurs in clinical teaching so colours one's outlook in one's subsequent practice of the profession that one is still obsessed by murmurs, as if they alone determine the cardiac status.

It is by no means suggested that cardiac murmurs are to be ignored. They have certainly their place in the assessment of cardiac efficiency. They call for a careful scrutiny of the heart and of its capacity for work. After all, it is this and this alone, the cardiac response to effort, that counts in judging the integrity of the myocardium.

Before proceeding with an actual estimate of præcordial murmurs, a few small precautions even in auscultatory examination of the heart need emphasis, for they are often forgotten by the student. Palpate before you auscultate, and palpate not merely the apex, but also the base of the heart and the root of the neck. Do not be content with auscultation over the four valvular areas of the heart, but hear over the whole of the præcordial area and beyond, and along the lines of propagation of murmurs. Remember the lines of propagation of murmurs: mitral systolic (regurgitant) murmurs are conducted towards the left axilla and inferior angle of the left scapula, pulmonary systolic (stenotic) murmurs towards the left shoulder along the second left intercostal space, aortic systolic (stenotic) murmurs up the neck along the carotids and aortic diastolic (regurgitant) murmurs down the sternum or towards the apex. These murmurs may be heard elsewhere within or without the præcordium, but they are conducted only along the lines of propagation mentioned against them and not in every direction over which they may be audible.

Look for general signs of heart failure, the symptoms and signs of venous congestion: breathlessness, with or without exertion, cough, cyanosis, jugular stasis, œdema, tender enlargement of the liver and basal lung congestion. Do not forget to look at the finger nails for clubbing.

If the position of the apex beat is depended on, as it perferably now is, as a measure of the size of the heart, it should be taken in conjunction with the general configuration of the chest, especially with the alignment of the spine. Grossly wrong inferences are apt to be made if the effect of scoliosis on the position of the apical impulse is not borne in mind.

Percussion as a criterion of the size of the heart is a lost art; with the progress of radiological technique, it has very much receded into the back-

ground ; ignored altogether by some physicians. As, however, facilities for radiological examination outside our hospitals are yet few and far between, it is desirable that the student should religiously learn to percuss out the outline of the heart and aorta and check his findings against teleradiographs, whenever possible.

For the sake of completeness mention may be made of the pulse, its rate and rhythm, its volume and force and tension, and the state of the arterial wall. Estimate the blood pressure too.

Murmurs over the præcordium may be true cardiac murmurs, due to organic changes in or to relative incompetence of the valves, or may be functional in origin or exocardial, or may be pericardial. Pericarditic murmurs can never be mistaken when they are typical: to and fro in character, with no constant place in the cardiac cycle, leathery in quality and superficial in origin. They are not always typical. Their superficial origin, a nasty rubbing or grating quality about them and their presence anywhere about the præcordium without reference to the valvular areas will generally betray their true nature.

Pleuropericardial murmurs are distinguished by their relation to respiration and too by their superficial orgin and rubbing quality.

Exocardial murmurs are always systolic, and generally apical, and localised. They are ascribed to the sucking action of a forcibly retracting apex on the neighbouring alveoli and are best heard at the end of inspiration. They may accordingly be present after exercise, in neurasthenia, in thyrotoxicosis, in certain sthenic fevers, with a forcibly acting heart in general. They may be accompanied too by a thrill. Recognition of their true nature will depend on absence of symptoms and signs of heart disease, on good cardiac response to effort, if the condition of the patient permits of the exercise tolerance test, and on the presence of signs of the causative condition.

The so-called functional murmurs are almost always systolic, rarely diastolic. Basal diastolic murmurs without valvular disease have long been recognised. They may be due to the aortic ring partaking of the dilatation of the aorta at its commencement, so that the aortic cusps fail to come into complete apposition though they are healthy. Apical diastolic murmurs have always been considered as a *sine qua non* of organic obstruction in the mitral orifice. Within recent years, however, cases have been reported of undoubted apical diastolic bruits in rheumatic fever, which have subsequently disappeared or which have left no trace post-mortem. I have seen one such definite instance myself. Over five years back we had in Dr. Guruswami Mudaliar's wards in the General Hospital, Madras, a medical student with undoubted rheumatic fever, with a changing diastolic bruit and with electrocardiographic evidence of cardiac damage. To-day he is quite fit and active at games and has no evidence of mitral stenosis.

Just as basal regurgitant (diastolic) murmurs may be due to a dilated aortic ring with intact valves, so can apical regurgitant (systolic) murmurs arise from a relative incompetence of the mitral orifice due to dilatation of the left ventricle pulling on the mitral ring. Dilatation of the left ventricle with normal dimensions of the mitral orifice is consistent with a functional apical diastolic murmur (relative mitral stenosis).

The so-called functional systolic murmurs are far commoner at the base, especially over the pulmonary area, than elsewhere. If apical, they are very likely to be exocardial. The usual text-book criteria of their recognition, such as their comparatively soft note, disappearance or mitigation on exertion or with erect posture and want of proper conductivity beyond the mid-axilla are not absolutely reliable. A functional murmur may be very harsh, may not disappear on exertion and may be well conducted. It is, however, rarely musical. Lewis has indeed recorded a very effective instance of the only way of judging the significance of cardiac murmurs. An ambitious Everest climber appealed to him against his doctor's verdict of a diseased heart because of a very harsh systolic murmur at the apex conducted beyond the axilla. Lewis found the exercise tolerance quite good and found no evidence other than murmur of heart disease and encouraged the patient to go ahead. He went and came back, none the worse!

Pulmonary systolic murmurs are practically always hæmic in origin. Why there should be in anæmia a systolic murmur heard best or only over the pulmonary area has presumably never been satisfactorily explained. Hæmic murmurs may be better heard over the aortic area or confined to the right of the sternum. They may be accompanied too by a systolic thrill.

Among organic systolic murmurs at or about the apex, diagnosis generally lies between mitral stenosis, tricuspid regurgitation patent interventricular septum and rarely patent ductus arteriosus. If signs of mitral stenosis are typical, there is no question of the diagnosis. Presystolic thrill at the impulse, a crescendo presystolic murmur ending in a loud, sharp first sound at the apex, almost absent second sound at the apex, but a very loud second sound over the pulmonary area are tell-tale evidences of mitral stenosis. Physical signs are, however, not always so obliging. The only sign of mitral stenosis may be a crescendo systolic murmur. In such difficult cases other evidences of mitral stenosis, selective enlargement of the left auricle and a well-marked 'P' wave in the electrocardiogram help in diagnosis. The actual site of the murmur is also of use. In mitral stenosis the murmur is best heard over the actual impulse. In patent interventricular defects the systolic murmur is shifted towards the sternum and is heard best over the sternal ends of the third and fourth intercostal spaces on the left side; the pulmonary conus is enlarged (it may be enlarged too in chronic pulmonic hearts); and depending on the size of the septal defect and its interference with spread and retreat of the electrical wave, there may be electrocardiographic evidence of muscle defect. The classical sign of patent ductus arteriosus is a to-and-fro thrill and a humming top murmur best heard nearer the pulmonary area, but rarely a systolic murmur over the pulmonary area may alone be present. Diagnosis may then have to be made on other signs, positive as well as negative. Patent ductus arteriosus, if not associated with other serious congenital muscle defects, will be singularly free from electrocardiographic abnormality. Tricuspid regurgitation is very rare as a primary lesion.

The least important factor in diagnosis of pulmonary stenosis is the pulmonary systolic murmur. It is conducted towards the left shoulder, is

accompanied by a thrill and is invariably associated with cyanosis and clubbing of the finger nails. Radiologically, it ought to be associated with an absent or ill marked pulmonary conus, unless the stenosis affects not the valvular ring but the trunk of the pulmonary vessels.

Aortic systolic murmur is similarly the least dependable sign of aortic stenosis. If aortic stenosis can ever be diagnosed on the strength of a single sign, it is its characterestic anacrotic pluse, the slow, small and sustained pulse, "pulsus infrequens, pulsus parvus and pulsus tardus." Next in importance is the aortic systolic thrill, conducted into the vessels of the neck. After the thrill comes the aortic systolic murmur (with an absent second aortic sound in uncomplicated cases) propagated upwards along the carotids. Signs of left ventricular enlargement, with an essentially downward displacement of the apex beat are confirmatory.

Aortic systolic murmurs may be due to aortitis, a dilated aortic arch, especially at its commencement, due, in other words, to a relative stenosis of the aortic ring. They may also be due to atheromatous or other roughening of the valvular cusps.

Of diastolic murmurs, the chief difficulty in diagnosis is likely to arise between mitral stenosis and aortic regurgitation, especially when the latter is of rheumatic origin. The classical signs of uncomplicated aortic leak are absolutely unequivocal and cannot be missed even by the novice. What is often forgotten, however, is that the valvular lesion may be present without marked reflux of blood in the classical direction, especially in rheumatic cases. In nearly 50 per cent of these the blowing diastolic bruit may be confined to the left of the sternum, may or may not be conducted along the line of propagation downwards and to the left, or may be circumscribed to a small area at the sternal end of the left third or fourth intercostal space. A mitral stenotic murmur, if diastolic in time, will always be farther away to the left, at or about the actual impulse. In doubtful cases appeal must lie with the other signs of aortic leak or mitral obstruction, physical, radiological and electrocardiographic.

Signs of aortic regurgitation are often masked, especially in the presence of congestive failure. I have seen a mitral regurgitant murmur as the sole presenting sign of aortic regurgitation with congestive failure. As the heart muscle improves under treatment, signs of aortic reflux become unmasked one by one. Even in the most concealed cases the more or less collapsing character of the peripheral pulse and the increased pulse pressure will rarely be absent. In doubtful cases again other accompanying signs, especially the selective differential enlargement of the heart chambers will offer some help in diagnosis. In chronic heart failure, however, whatever the original cause, all the different chambers of the heart will ultimately be affected. Then a policy of 'wait and see' will clear the diagnosis.

There is nothing new in this running commentary on the significance of cardiac murmurs. It is not exhaustive. It is partly of necessity dogmatic, chiefly to promote easy understanding. The issues are not always as clear cut in actual practice. Diseases are not so obliging as always to conform to text-book type. It is hoped, however, that these notes will find general acceptance as a rough guide to a true estimate of cardiac murmurs.

House Surgeons in English Hospitals.

BY X. H. S.

One bright afternoon at 5 o'clock, some 20 years ago, I was one of a batch of about 20 candidates who had just finished their orals in the final examination for the Scottish Triple qualification, and were waiting our fate in the waiting room of the Surgeons' Hall at Edinburgh. In a few minutes about a dozen of us were asked in, congratulated by the examiners, made to sign declarations that we would uphold the dignity of the profession and to write our names in the Roll. (The rest were politely told by a clerk outside that they were referred to try again after three months.)

As soon as I left the Hall, I went to a news vendor's stall and purchased the latest number of the B.M.J., and strolling up to Blackford hill, scanned there leisurely all the advertisements about 'situations vacant.' Next morning I went round and saw all the urge ons and Physicians under whom I had worked and got their testimonials.

Then began the not unpleasant task of replying to advertisements, enclosing copies of testimonials with each. Being a foreigner in the country, I naturally never expected to get into any big hospital and so replied to advertisements of only small hospitals. But I saw a small post in a big teaching hospital in a provincial town advertised and made bold to apply for it. I was, to my surprise, asked to go, for an interview on the promise of my railway expenses being paid for by the hospital. It was a teaching hospital of over 500 beds attached to the local University and the appointment I had applied for was that of an Assistant House Surgeon. After the interview with the medical faculty of the hospital I was told that I was appointed and the date on which I should join duty fixed. It was just about lunch hour then and the Superintendent of the Hospital while paying me my travelling expenses asked me to join the residents at lunch before departing. (The Superintendent by the way was not a medical man.)

After this appointment, luckily and unluckily for me I did some six years of resident appointments, from this Assistant House Surgency to that of a Resident Surgical Officer in various provincial hospitals of 40 to 500 beds, general and special. Luckily, of course, because of the professional experience gained; but even more so because I got the opportunities of seeing Englishmen at close quarters as they are amongst their own people and also because of the ever so delightful treatment I received from them throughout. So delightful that even after a lapse of twenty years, the words 'English' and 'delightful' are synonymous to me.

Unluckly, for, the contrast in administration of medical institutions in this country has always made me sore at heart and even the much advertising provincially autonmous Governments are in no way allaying the soreness.

As an Assistant House Surgeon I was getting free board, lodging and laundry and some 25 or 50 pounds a year. The food supplied was that of the upper middle class. Bacon and eggs with bread, butter, marmalade and coffee for breakfast; cold meat or pie, pudding, bread, butter and cheese with lemonade, beer and/or milk for lunch; bread, butter and jam with tea in the afternoon; soup, meat and pudding, with beer for dinner and milk and coffee with bread, butter and cheese for supper.

The duties were those of looking after the dressing of casualties and of out-patients till 1 P.M. After that two hours of casualty duty during the afternoon and, when not out, of giving anæsthetics or assisting at operations if called upon. When not on duty I could go out but had to return by 10 P.M. We were two Assistant House Surgeons and one of us had to be on night duty alternately. There were telephones by our bedside and we were called down whenever wanted by the nurse on duty.

Assistant House Surgeons are appointed for three months at a time. House Surgeons for six months at a time and the senior residents as the Resident Medical Officer and the Resident Surgical Officer for a year at a time. All had to be under thirty, unmarried and all had to stay in the hospital. The senior of each department was in charge of the residents in his departments and the senior amongst the Resident Medical Officer and the Resident Surgical Officer was in charge of all the residents.

The House Surgeons and House Physicians were in resident charge of all the beds of the Surgeon or Physician under whom they were placed. Under the guidance of their respective chiefs they carried out all treatment, and assisted their chiefs at operations or investigations of cases, and assisted Assistant Surgeons and Physicians in the handling of serious emergencies and at the out-patients. Between 1 and 10 P.M., each one was posted on casualty duty, by turns for two hours at a time and one House Surgeon was posted each week for anæsthetic duty for operations other than the listed ones. Those that pleased their surgeons were coached in operative work and given operations to do on their own. In cases of double hernias, my surgeon, after seeing my work for a few days, began to ask me to do one myself while he was doing the other at the same time.

Three or four times a month a Surgeon would ask his House Surgeon to go and assist him at or to give chloroform to a private case of his and pay about £2-2-0 for each occasion. All surgeons had been House Surgeons in their time and had felt the pinch in their pockets. Barring this, House men are not allowed any other professional income; even the fees obtained for attending courts about some compensation or accident case had to be surrendered to the hospital.

The House Surgeons like the Assistant House Surgeons are paid very little and sometimes not at all in teaching hospitals, but all get their board, lodging and laundry free. The senior men like the Resident Medical Officer and the Resident Surgical Officer etc., get about £100 a year beside the board, etc. In smaller hospitals the salary is larger and in hospitals like the Infectious Diseases hospitals, Poor Law Infirmaries and Lunatic Asylums the salaries are handsome.

The senior residents are in touch with all serious cases in their departments, supervise the work and duties of House Surgeons, and give clinics or do out-patients as desired by the staff. They are also in charge of the medical and surgical equipment and responsible for its maintenance.

An House Surgeon has a definite status and is not looked upon as a dresser or clerk with medical degrees. Medical men as a class are highly respected in that country and an House Surgeon is a medical man. In courts of law, which he has often to attend in cases of assault and injuries, he is given a seat of honour usually in the Judge's gallery, and is usually relieved early so that his valuable time may not be wasted.

In the hospital, subject to the orders of his surgeon or physician, to the claims of the assistant surgeon in out-patients work and in emergency cases and to the guidance of the Resident Surgical Officer in serious and special cases, he is in sole charge of his wards. The nursing staff and even the Superintendent has to take orders from him. The nurse in charge waits on him whenever he attends the ward. When more than one resident happen to be in a ward at the same time the senior nurse attends on the senior resident and the next junior nurse on the junior one. If the matron also happens to visit the ward at the same time, she has either to go away for the time being or be content with the attention of a junior nurse.

Ordinary diets are signed by the nurse in charge, and any extras or special diets by the House Surgeon; Surgeons and Physicians might order diets but have nothing to do with signing or initialing. Certificates to in-patients and out-patients also are issued by House Surgeons, the higher staff giving certificates only when consulted privately.

These teaching hospitals as a rule have all departments in the same hospitals, though the city might have other special hospitals such as Eye, Ear, Nose and Throat, and Women and Children's. The work of each department is strictly confined to its own line, consultation with other departments being compulsory when complications or additional ailments belonging to the line of another department are noticed. If for instance a surgical case shows some disease of the eye, the House Surgeon in charge writes on the case sheet "will the Resident Ophthalmic Officer kindly see" and sends the case sheet to the Officer's room, and the latter attends to it. If the attention is deemed urgent, the House Surgeon sees the Resident Officer personally and tells him so.

All freshly qualified men do not rush to big or teaching hospitals. Only those aiming at attaining the position of consultants value these appointments. Consultant's position is a waiting game taking some ten to fifteen years before a living can be obtained, and as such requires a lot of capital, besides the energy and ability for getting higher qualification. Only those, therefore, that have enough money, aptitude and patience try for teaching hospitals.

Others try for posts in smaller hospitals for a year or two and settle down in general practice. These appointments in smaller hospitals besides bringing them better remune-

ration, give them a better social position, because of the smallness of the place where they are situated, and such appointments in a few hospitals enable the young medicos to select a place for settling down. These hospitals of course provide enough experience required by a general practitioner.

Those that are poorer and have not money enough to purchase or start a practice on, try for hospitals with much less educational value, like fever hospitals, etc.

Young medicos therefore are in a way automatically and also sensibly distributed to institutions all over the country and each has his requirements satisfied.

From the Orthopædic Department, General Hospital.

BY N.S. NARASIMHAM, F.R.C.S. (ENG.)

I. On early diagnosis of tuberculous disease of joints. I have realised that it is difficult to come to a certain conclusion in cases of affections of large joints. One must decide whether a joint has to be rested or not. A radiograph taken even a week after immobilization of a joint does show rarefaction. Therefore before a diagnosis is arrived at, a sub-acute or a chronic affection of a joint should not be immobilized. A slight rise of temperature taken in the mouth or rectum, local wasting of the muscle continued warmth of the joint during repeated examinations narrowing of the interarticular spaces in a skiagram, and a positive Montoux test will enable the surgeon to come to a conclusion. It is difficult to prove the tuberculous nature by a positive finding. Many examinations of synovial fluid prove to be sterile and no T.B has been recovered on guinea pig inoculation. In one instance of a hip joint case, and in two instances of the spine have T B. been found on guinea pig inoculation. There is generally an enlargement of the lymph stand draining the area. It is claimed by some authorities that biopsy of these glands has given more positive results. In three instances, the biopsy proved negative histologically and on guinea pig inoculation. In three instances of synovectomy of early tuberculous disease, the synovial membrane was not histologically tuberculous. One of these, a case of T. B. of Elbow in a woman aged 31 kept under continued observation shows bony changes in the humerus and has developed a cold abscess in front of the sternum. Therefore, a biopsy of the synovial membrane and the lymph gland draining the area will not give a positive result in the early cases. If the disease has lasted for more than an year and a half, the histological examination of the synovial membrane has uniformly proved to be tuberculous. Clinical judgment must remain supreme in the diagnosis of these cases.

II. Osteochondritis of (1) the Hip, (2) Pubic bone and (3) Shoulder and Carpal bones.—No epiphysis in the body is immune to the disease. One case of vertebra in a boy aged about 15 and three cases of Schlater's disease and one of navicular of the foot have been seen. Seven cases of osteochondritis of hip were seen in nine months, two males and three females. Right hip in four cases and left hip in three cases. Age period $\frac{5—10}{3}$, $\frac{10—20}{2}$ $\frac{20—30}{2}$.

This fact is mentioned here as books mention that the disease has a greater frequency in boys. There was one instance in a female aged 18 who came in with symptoms of acute arthritis of the left hip with general constitutional symptoms. A skiagram revealed a healed osteochondritis of the hip. She is a married woman with children and broken down health Her Montoux reaction is positive. The limb was treated with skin traction on a Thomas splint. Although the skiagram does not reveal any change, this may be an instance of a Perthe's disease becoming tuberculous.

Central dislocation of the hip after subtrochanteric osteotomy. 35 Ys.—M.

Osteochondritis Right pubic bone with left iliac abscess, 9 Ys.—F.

Such a case I have observed in spine who developed a large para-vertebral abscess. The accompanying print shows the present condition of the hip. There was one instance of osteochondritis of the iliac portion of the acetabulum. The patient, a male aged 16, came in for pain over the iliac crest, the hip joint movement being quite free.

Osteochondritis of the Os Pubis.—A girl aged 16 came for a left iliac abscess. A routine skiagraphic examination revealed osteochondritis of the pubis on the right side. There are no symptoms referable to this region. Left iliac abscess was staphylococcal in nature. The accompanying print shows the conditions of the pubic bone.

Osteochondritis of the upper end of the Humerus.—I am not able to trace in the literature cases of osteochondritis of the upper end of the humerus. Two cases both in boys of about 12 have been seen during the past six months. One of the cases was shown before the Madras General Hospital clinical meeting. The accompanying print shows the actual conditions. Montoux test and serum reaction are negative. The general health is good. There is no other abnormality. The patients came with painful shoulders and attributed them to injuries which were slight in nature. In both instances there was marked shortening of three-quarter of an inch. This is not expected as it is not a weight-bearing joint. This may be explained by the fact. that the growth in length takes place at the upper end of the humerus. Osteochondritis changes in the upper end of the humerus has been described after Erb's paralysis.

Osteochondritis of the Carpal Bones was seen in a man aged 18 who came with pain in the wrist after a slight injury about six months previously. Skiagram revealed the true nature of the condition.

III. A case of central fracture of the Acetabulum with penetration of the femoral head.—A man aged 35 was admitted for limitation of movement of the right hip after a fall from a great height four months previously. He had a Colles's fracture on the same side. There was flattening of the trochanteric region. The trochanter was slightly raised. There was half an inch of shortening. Rotation movement was entirely restricted. On deep palpation of the abdomen just above Pouparts' ligament, a swelling was palpable, and a swelling inside abdomen was palpable on rectal examination. A skiagram confirmed a central dislocation of the femur. The fractured floor of the acetabulum has joined up by callus. A subtrochanter osteotomy was performed. The lower fragment displaced inwards towards the acetabulum. The patient was put in plaster and after eight weeks was allowed weight bearing in plaster. He is free from pain and walks easily Central dislocation of the femoral head is rare. I have seen a case ten years ago. Treatment in a recent case consists in reduction by traction. The floor of the acetabulum can be replaced by pressure through the rectum or the vargina. It is impossible to correct the deformity after two weeks.

Central dislocation of the hip is a very uncommon injury; the earliest note was in 17 8 and in 19th century Sir Astley Cooper described it.

Up to 1907 only 50 cases have been noted in the literature.

I am indebted to the Barnard Institute of Radiology for the X-ray prints.

Perthe's Disease. Left. 18 Ys.—F.
Came in for acute arthirits of the hip which was subsiding.

Perthes—of the upper end of the Humerus. 10 Ys.—M.

National Health Insurance Scheme.

K. CHINTAN NAMBIYAR, F.R.C.S. (ENG. & EDIN.)

The National Health Insurance Medical Practice was introduced into Great Britain in December 1911 by Mr. Lloyd George, as Chancellor of Exchequer in the Liberal Government. A similar system was in existence in Germany, a quarter of a century before this time. Mr. Lloyd George copied the system in its spirit and changed the provisions to a remarkable extent to suit the requirements of Great Britain. It was meant mainly to benefit the working class people, who were compelled by legislation to get themselves insured against sickness and disability. All of them between 16 and 70 years of age, who were under contract service, and drawing a pay of less than £250 per year, were compulsorily insured, the premiums being partly paid by the worker and partly by their employers, totalling nine pence per week per head. This amount multiplied by the number of people insured gives the total amount and the State adds a grant to it, forming the central pool, which is utilised for the expenses of the National Health Insurance Service (N. H. I. S.)

In return for the payment above mentioned, the insured person is entitled to secure (1) free medical treatment including drugs and appliances, at home, or the Doctor's surgery according as he is bedridden or ambulant; (2) payment during sickness of 10*s.* for men and 7*s.* 6*d.* for women per head per week up to 26 weeks; (3) disability payments; (4) and a maternity bonus for women. Furthermore, Sanatorium treatment for tuberculosis was to be provided. These benefits were to be obtained through approved Societies, such as Trade Unions and Friendly Societies; and for those who did not belong to any such societies, through the Post Office.

This was clearly a step forward and an extremely important Social measure. As usual, there was vehement opposition from all quarters. The workers and their employers put up a resistance on varying grounds. The medical profession had its own grievances. The insurance authorities arranged with the local practitioners for the medical treatment of the insured at a rate of payment of 6*s.* per head per annum. The British Medical Association protested that the payment was too meagre. So the Government increased it to nine shillings. This again was thought too small and more than 27,000 doctors signed an undertaking to support the British Medical Association in its determination to fight the Government, by withholding their services. The strike continued for a couple of years. Mr. Lloyd George carried the day and gradually the strike was broken, so that in 1913 the British Medical Association was compelled by large scale secessions from its ranks, to relieve its members from their promises. The protest was of some use. The reasonable demands, such as, the Free Choice of doctors and an increase in the capitation fee had been granted. The Act came into force, became popular and, until to-day, it is accepted as a necessary part of the social system in Great Britain.

At the present date, in Great Britain 19 million people are insured against sickness and disability and not less than 16,000 general practitioners are in the insurance list. They are technically called panel doctors and their names could be removed from the list only by the Minister of Health on sufficient grounds of misconduct. The patients have complete freedom of choice of doctors, limited only by geographical distances. In order to avoid congestion and overwork on the part of the doctors, the rules for the limitation of list came into force. The maximum number of insured people on the list of any single doctor was limited to 2,500 and with an assistant to an additional number of 1,500. The above is a brief sketch of the National Health Insurance Scheme as it exists in Great Britain to-day. Now I shall, in the following few lines, give a skeleton of the administrative aspect of the system:

For purposes of administration, a Minister of Health is appointed who is responsible to the Parliament on one hand, and to the insured public and the panel doctors on the other. The state is divided into small districts, counties or country-boroughs to facilitate working and a regional medical officer is appointed to each district directly under the Minister of Health. He is assisted by an Insurance Committee formed as follows:

Three-fifths of the members are elected by the insured persons, one-fifth nominated by the county council and the remaining one-fifth consists of representatives of medical men and chemists and the total number of members varies between 20 and 40.

The Insurance Committee is responsible for the maintenance of the register of insured persons and a list of panel doctors and the list of insured persons under each panel doctor, with the possible changes from time to time. It is also concerned with the remuneration of doctors on the capitation basis. The doctor who gets on the Insurance practice communicates with the clerk of the Insurance Committee and carries out his duties under the instructions and guidance of the Insurance Committee (I. C.).

The Health Insurance Act provides for the setting up of a panel committee, a representative body of the Insurance doctors, whose opinion shall be consulted by the Insurance Committee where medical matters are concerned.

In certain districts, an additional medical committee, called the *Local Medical Committee* formed by the representatives of the General Practitioners (G. P.) as a whole, is created to discuss the questions relating to the interest of the profession as a whole. But this is not always necessary.

Any dispute between the insured person and the panel doctor is referred to the *medical service sub-committee* consisting of equal number of representatives of insured persons and doctors, the total number varying from 6 to 10.

The Insurance Committee and the panel committee work hand in hand in their districts to prepare a statement of conditions called the *Allocation Scheme*. The executive body of this scheme is called the *Allocation Sub-Committee* and consists of equal number of members appointed by the Insurance Committee and the panel committee. This committee is mainly concerned with the assignment of insured persons provisions for emergency treatment and limitation of of list, etc.

The central pool or the Central Practitioners' fund is divided into the different districts by the minister in consultation with the *Medical Distribution Committee* consisting of representatives of panel doctors, Insurance Committee, etc. This fund is called the practitioners fund for the area and will be distributed among the various doctors on the capitation scheme. Thus I have given you a brief sketch of the administrative frame work of the National Health Insurance Scheme. The National Health Insurance Act may be varied from time to time by the Parliament according to the requirements of the country.

The statements and regulations mentioned above apply only to the scheme in England and Wales, while those of Scotland and Ireland are slightly different in their working, though the general principles remain identically the same.

Now having described in brief a skeleton of the National Health Insurance Scheme of England and Wales, I shall proceed to calculate the advantages and disadvantages of the scheme and place it before you for discussion regarding the possibility of introducing it in Madras. It is apparent that a closer study of the social, political and economic conditions of the people is essential before a decision can be arrived at. I only hope by this paper, to stimulate your thinking in this particular direction and be familiar with the conditions of practice in western countries.

Advantages.—(1) The poor and the working class people get medical attention at a low cost. They get sickness benefit for 26 weeks during the time they cannot earn their livelihood and further in case they are disabled for life, they get compensation for the same. As they can get medical aid as often as required, there is no delay in consulting the doctor. Thus the health of the working class is considerably improved. They also get their drugs and appliances free from the Insurance Chemist.

(2) The system when coming into force will, in effect be an institution of family doctors, though the individual members of a family have their freedom of choice of doctors. This is of considerable advantage from point of view of diagnosis and also in winning the faith of the patients. The panel doctor knows by heart the life history and the family history of most of his patients and, in certain cases, their private lives as well. One can imagine how useful is such a system towards early and correct diagnosis.

(3) Thirdly the medical practitioners automatically get themselves arranged into two classes, the General Practitioner and the Specialist. If the patient does not improve under the General Practitioner's treatment, the latter recommends him to a Specialist in the hospital. Thus the patient has no chance to approach another General Practitioner. This factor may I presume, is of exceedingly great importance in the improvement of medical ethics in any country. Backbiting, under-hand dealing, touting, client catching, etc., will automatically disappear or diminish to a great extent. We know the number of prescriptions and opinions an average patient can gather before a dose of medicine actually finds its way into his stomach; and also the disconcerting remarks and expressions of dismay that one General Practitioner flourishes over the prescriptions of his colleagues in the profession. Far be it from me, Sirs, to insult my own profession. But facts

have to be said at least sometime, somewhere. The fault is in the system, that is governed by the struggle for existence. We have to stop it and the best way is the introduction of the panel system.

(4) And from the view point of the General Practitioner he should be glad to welcome it. He obtains a great many conveniences to his credit. *Financially* he knows where he stands. Nothing to be afraid of his living Rise or fall in his income of any dimensions is very unlikely. He has in all essence a fixed pay *Secondly*, he can avail himself of leave by the appointment of a Deputy, as long as required, without endangering a bit the size of his practice. The biggest General Practitioner in Madras, as it is to-day, cannot afford to be sick for a couple of months together. *Thirdly*, practices can be sold and bought. Is it not a great blessing ? If after some period of practice in a locality, one finds neither the place nor people suit him, he can sell that practice and look for a better place. Is this not a covetable state of affairs? On the other hand, if he is compelled to stick on to the same place, where people don't want him, the General Practitioner is ruined for life and is very unlikely to have another chance to thrive. Haven't we many such examples in our profession in the city of Madras ?

(5) The monopoly of general practice by a handful of seniors will turn out to be much less extensive as it is to-day, for they will be compelled..... .....by law, to employ assistants, when they are above 2,500 on their list and pay them handsomely.

A few other smaller advantages may be just mentioned. No patient can reach a specialist privately or in a hospital, without a letter from the General Practitioner who is the family doctor. The General Practitioner will not waste time in consulting the specialist, for he gains nothing by dragging on the futile treatment he can afford. The specialist depends on the General Practitioner for his practice and, therefore, there exists a lot of sympathy and goodwill between the two. The false value of certain particular General Practitioners will not be so great as it is to-day. What the patients can ask for is a doctor and they learn by experience that every qualified doctor can cure their ailment, failing which the specialist will come to his rescue. From the economic point of view of the country, the dumping of patent medicines from the various European countries will considerably diminish for the insurance chemists can give only the local drugs and not any patent medicine as fancied. Of course, we know, that the majority of the patents going about in the country are really unnecessary and a great drain of our resources.

Disadvantages of the system are certainly few. Overdrugging of the patient is a real one. The General Practitioner who is enthusiastic of getting more members on his list, tries to favour them with medicines, even where they are not indicated. But this is prevented by the Insurance Committee by keeping a watch over the panel doctors and the total numbers of their prescriptions.

Another one is that the doctor has not a great stimulus for further knowledge. His life is in the great majority of cases a clerk and a prescriber combined. But now in England, the authorities are taking measures to give the panel doctors some sort of post-graduate teaching.

Difficulties in introducing this system into our province are not many. But the few difficulties are really valid ones. The percentage of the population, that is drawing any pay, or that can be made to pay their premiums regularly is a very small one indeed. So the system cannot avail itself of being of universal benefit. Some other local arrangement will have to be made in our province to get over this difficulty.

Then, the different systems of medicine, favoured by different sects of people may appear to be a great handicap. But it is not really such, so long as one can got himself insured on the list of any particular doctor that is registered. And unregistered medical practitioners will have to be prevented from practising.

The difficulty is mostly in villages where there is only one earning member in a family of a dozen, where the people are accustomed to local herbs prescribed by their grandmothers. This is really a system for industrial countries. How far it is workable in a peasant world should be considered at greater lengths.

In conclusion, may I state, that the National Health Insurance system is a very desirable one. The manifold advantages to the public and the profession, in comparison with the few and insignificant disadvantages really outweigh the latter. The points to consider in the possibility of making this system workable in a different soil with varying political, social and economic outlooks and more accurate data of people work and money are essential for coming to a conclusion, regarding the introduction of the system into our province. In my heart of hearts, I fervently hope and pray that this system comes into force in our Province at the earliest opportunity.

A Case of Kidney Tumour.

FROM DR. MANGESH RAO'S WARDS.

BY MISS M. VERGHESE.

Patient.—A Mahomedan female admitted on the 12th January 1938.

Age.—30 years.

Occupation.—Cook.

Complaint.—Pain in the left lumbar region.

Duration.—seven days.

Family history.—Married ; had three children. Two died one at the age of five and the other as a baby. The eldest is alive and is healthy and is now seventeen years old.

Previous illness.—Nothing particular.

History of present illness.—After the patient's first confinement, *i.e.*, seventeen years ago, she noticed a swelling in the lumbar region. This was accompanied by fever and she was bed-ridden for nearly three weeks. A few years later she experienced a prickling sensation which did not amount to pain in the region of the swelling and later she used to get attacks of nauseating pain, confined to the left lumbar region along with painful micturition; after micturition the pain was slightly relieved. The interval between the attacks was six to nine months. She gives a history of hæmaturia about two years ago This lasted for four days, but there was no pain. For the last seven days she has been having more or less severe pain of a persistent aching character, with slight frequency of micturition, but no hæmaturia. The pain has no relation to food nor is it accompanied by vomiting.

Condition on admission.—Patient is a poorly nourished individual of 30 years, not anæmic, teeth dirty, pyorrhœa alveolaris present, tongue moist, and uniformly coated, both tonsils not enlarged. There is a swelling in front of the neck in the region of the thyroid gland, pupils dilated and reacts to light immature cataract in both eyes and a pterygium in the left eye.

Cardio-vascular system.—Pulse 90 per minute, regular volume and tension good. *Apex beat* is visible in the fourth and fifth space in the midclavicular line. It is of a diffused and heaving nature and is best felt in the fourth intercostal space in the midclavicular line. *Heart boundaries*, nil abnormal. *Heart sounds* are rapid. *Blood pressure*, systolic 104, diastolic 60.

Respiratory system.—Nothing abnormal on inspection on percussion from the apex up to the level of the spine of the scapula, was dull on both sides and V.F. and V.R. were increased on both sides in the dull area. On auscultation there was nothing abnormal.

Alimentary system.—Appetite good, bowels constipated, liver and spleen not palpable.

Local condition-(A) *Swelling in the lumbar region.*—There is a well-defined

swelling which moves with respiration in the left lumbar region filling up the left flank and extending anteriorly as far as the left lateral line and posteriorly under cover of the erector spinæ. The swelling is moderately hard, of uniform consistency and it has well-defined rounded edges. It is movable in the horizontal plane, but cannot be moved across the middle line. Tenderness is present in the left loin specially in the region of the left iliac crest. It is dull all over on percussion but the dullness is not continuous with that of spleen. Auscultation reveals nothing.

(B) *Swelling in the neck.*—Patient says that the swelling started as a small round mass in the upper part of the left sternomastoid when she was a child and it progressively increased in size and it is of now the size of a cocoanut situated in front of the neck. The swelling extends from the thyroid cartilage above to the manubrium sternum below and transversely from the anterior border of the left sternomastoid across the front of the neck to the posterior triangle The swelling mars on deglutition and is pulsatile, prominent veins are seen coursing over it. The swelling is warm nodulated, rubbery hard in consistency except for a cystic feel in the middle. It can be moved on deeper structures and the skin is not adherent to it. Auscultation reveals the presence of a bruit. The regional lymphatic glands are not enlarged. No tremors of the fingers or tongue are present. Von Graefe's, Stellwag's, Mœwis and Joffroy's signs are negative. There are enlarged glands palpable in the left posterior triangle extending to the supra-clavicular region.

Investigation done:

Date.—13th January 1938.

Examination of urine—Reaction acid Sp. G. 1028, albumin and sugar nil.

Microscopical examination of deposit. Pus Cells+. R. B. C.+.

Urea clearance test (19th January 1938.)

Blood urea 36 mgs.

Urine urea 1·04 per cent.

Quantity of urine 144 c.c. in 1 hr.

Standard urea clearance per cent of average normal, 92·2 per cent.

21st January 1938. Urine urea 0·7245 per cent. Albumin 0·098 per cent.

20th January 1938. Report on blood.

Inorganic phosphate 3·8 mgs. per cent.

Calcium 10 mgs. per cent.

20th January 1938. Urine culture right and left uretical specimen sterile.

Plain pictures shows linear shadows of calcification in the tumour and calcification of the lower border of the tumour.

Uro selection pictures—Right kidney is well visualised and excretes in normal time.

Left kidney.—Pelvis is flattened out in upward direction and the upper end of ureter and upper calyx are arched upwards and inwards. The lower calyx is obliterated suggesting pressure on the pelvis by tumour of the lower pole of kidney.

Retrograde pyelogram.—Left ureter and a flattened and elongated upper calyse are visualised. The ureter in its upper part is arched and displaced upwards and inwards.

Lungs.—Both lungs show secondary deposits extensively distributed.

On 20th January 1938. A cytoscopy was done by Dr. N. M. Rao. The result was: bladder nil abnormal, left uretal opening large and pinkish looking, efflux from left contains little flakes of pus. Indego carmide 10 c.c. was given intravenously and adrenaline 1 c.c. subcutaneously dye excreted by right kidney in eight minutes and by left in 20 minutes.

Differential diagnosis (A)—The tumours of the kidney can be divided into :—

I. Benign growths; and

II. Malignant growths.

I. The benign tumours of the kidney are :—

(1) *Diffuse cytic disuse* or adenoma of the kidney which may be congenital or acquired. It is always invariably bilateral.

(2) *Papilloma of the renal pelvis.*—This has usually been observed in elderly people and the chief, if not the only symptom is excessive hæmaturia.

(3) *Angionia of the renal pelvis* is the rarest of the innocent growths of the kidney and given rise to painless hæmaturia.

These benign growths are extremely rare.

II. Malignant growths of the kidney can be divided into :—

(1) Sarcomata of infants (Wilon's tumour).

(2) Sarcomata of adults. This occurs between the 30th and 50th years of life but this is a very rare condition.

(3) Adeno carcenoma. This is an uncommon form of tumour in the kidney. It is in the majority of cases associated with the development of a variocele.

(4) Hypernephromata (Grawitzs tumour.)

This is the commonest of tumours of the kidney (75-80 per cent of all renal tumours). This occurs between the 50th and 70th years of life usually occupying the upper pole of kidney. At first it is encapsulated, but later it is invasive. The hæmaturia associated with this tumour is often late in appearance and is also less persistent than in other malignant growths of the kidney. The pain may be of a persistent aching character or of a colicky nature due to the passage of clots down the ureter.

(1) The frequency of the occurrence of hypernephromata,

(2) The persistent aching character of the pain, and

(3) The infilteration in the lungs are all points for the diagnosis of hypernephroma. But the presence of calcification seen in the affected kidney (as shown in the X-ray pictures is unusual. Why there should be calcification in an hypernephroma remains unexplained. This is a fact so far not seen in a renal tumour.

The origin of hypernephroma.—The study of kidney tumours is one of the most perplexing and confusing chapters in the whole of pathology. At one time all tumours of the kidney were divided into two classes, one, in which the tumour arose from the epithelium of the renal tubules, the other, comprising yellowish tumours which were regarded as lipomas. In 1883 Grawitz pointed out the close resemblance between these so-called lipomas and the cortical hyperplasia of the adrenal first described by Vischow. Grawitz demonstrated the occasional presence of the adrenal casts in the capsule and the cortex of the kidney. From these facts he concluded that the fatty tumours were adrenal in origin, being derived from the adrenal casts in the kidney. The tumour was therefore known as hypernephroma or Grawitz tumour. Enthusiastic desciples soon included the majority of tumours in this category. In 1893 Sudeck followed by Stocate 1908 attached the popular conception pointing out that many of the features supposed to be characteristics of Grawitz tumour were shared equally with

tumours undoubtedly arising from renal tubules. At present many surgeons and pathologists now say, that all kidney tumours arise from tubular epithelium. The chief arguments these writers give are

(1) The clear vacoulated lipoid-filled cells found in hypernephromata (adrenal cortex) are found in pure and simple adenomas of the kidney, composed of typical tubules.

(2) Hypernephroma may show a tubular formation which is never seen in the adrenal gland or tumour of the adrenal cortex.

(3) Tumours of the adrenal cortex are associated with sex disturbance (virihism) which are constantly in hypernephroma.

As usual the truth is to be found in neither extreme camps. It is true that perhaps the majority of tumours are carcinomata of the renal origin, but it is also true there is a well-defined class of tumours which are certainly hypernephromata and of adrenal orgin.

(B) *Discussions.*—(1) Since the swelling in the neck moves on deglutition and is pulsatile, the swelling may be a toxic goitre. But the toxic and pressure symptoms (*e.g.*, palpitation, tachycardia, exopthalmos, fibrillary tremors of the extremities and tongue, aphonia, and dysphagia), which should have been very evident for such a large swelling, were absent.

(2) The movement on deglutition may be due to the fact that the swelling is adherent to the pretracheal layer of the deep cervical fascia, not to its supposed thyroid origin.

(3) The site of origin and the discrete glandular nodules felt on palpation suggest its being a lymphadenoma, and perhaps the cyetic feel in the centre of the swelling may be one of simple goitre. So the condition may be one of simple goitre combined with lymphadenoma.

A biopsy would have helped in the diagnosis but it is regretted that the patient did not permit.

My thanks are due to Dr. Mangesh Rao for help and suggestions in this case and to the Superintendent of the General Hospital for permission to report the same.

Polish.

BY C. V. R.

Look up your text books, or note books of Physics. Can you find any explanations of lubrication, hardness, softness, polish? Very likely 'no'.

We see in the hospital the flooring slabs being rubbed with water in between; after a day or two of this rubbing the slab is smooth and shining. The scissors, whose surface was dazzling bright when fresh, become dull with frequent handling. Put some rouge over it, rub it with selvyt cloth, and the old polish comes again. The polish on your shoe gets duller as dirt accumulates on it. A dash of polish and vigorous rubbing with a soft brush brings back the shine. Let us see if Physics can explain, or paraphrase in its dialect, these facts (phenomena).

The molecules constituting the surface of the slab are initially disposed, at random, in a series of minute hills and dales and, therefore, the surface is rough to the touch, reflects light in all directions, and appears rough. Rubbing with pressure and water in between, scratches and washes away all the hillocks of molecules, leaving a one level arrangement. The slab now appears smooth. A polished surface is a very regular array of molecules all in the same line and pointing the same way. The grease and dirt on the scissors also constitute a pile of rubbish; the rouge mixes up with them; the selvyt cloth rubs away the rubbish with the rouge, and the old polish is again out.

Boot polish is a solution, in spirit, of waxes made up of a large number of atoms. C*n*H*p*. OH. would represent the constitution of a wax molecule. The numbers *n* and *p* may be anything between 30 and 100. X-rays, that have had a peep into the wax and got a knock from those atoms, tell us that they are arranged in a long chain which ends in CH_3, the hydrogen atoms showing out. The OH group can enter into combination with any other substance, while the CH_3 group is relatively inactive. When, therefore, we leave the polish on the leather, the trace of spirit evaporates leaving the wax on the shoe surface. Now we rub this wax on, with a brush. The wax molecules press on the leather, the OH parts bite on to the leather material, the CH_3 ends stick out in order. The more we rub, the more wax molecules attach themselves to the leather, showing a regular array of CH_3 ends, which is a *fine polish*.

Cobra Venom in Leprous Neuritis.

BY H. H. GASS, *Chandkuri*.

Introduction.—The pharmacological and therapeutic action of cobra venom has been studied by various workers A review of the literature is given by Chopra and Chowhan.[1] It is interesting to note that the study of the analgesic effect of venom originated in the observation made by Monaelesser.[2] that a patient with leprous neuritis showed marked relief of pain after being bitten in the affected limb by a large tropical spider. Since then, various venoms, particularly cobra venom, have been used in the relief of pain in various diseases but chiefly in malignant disease.

Chopra and Chowhan state that the relief of pain is probably due to a neuro-toxin. Kellaway and Holden[3] speak of a curare-like action on the motor end-organ. Macht[4] showed that the sensibility to pain produced by electrical stimulation was much reduced after subcutaneous and intramuscular injection of cobra venom.

Leprous neuritis.—Neuritis due to leprosy manifests itself in two main forms: (*a*) acute and sub-acute, (*b*) chronic. The acute and sub-acute forms of leprous neuritis are usually associated with lepra reaction which is usually a temporary condition lasting a few days or weeks. During the reaction, various nerve trunks particularly the ulnar, may be acutely inflamed, enlarged and tender, and there may be excruciating pain in the distribution of affected nerves.

In the chronic type of neuritis, the thickening, inflammation and tenderness of nerves is much less marked, and the patient complains of sensations of pin pricks and formication in various parts of the body but chiefly in the limbs. Similar sensations are experienced in the active macules of the neural type of leprosy. These sensations may be very unpleasant and often cause great discomfort during the day and insomnia at night.

Procedure followed.—At the suggestion of Dr. Lowe of the School of Tropical Medicine, Calcutta, we undertook to investigate the effect of cobra venom in patients showing symptoms of neuritis. The venom was supplied by the Department of Pharmacology of the School where it was standardised in mouse units, one mouse unit being contained in ·1 c.c. of solution. The recommended dosage was as follows:—1st day ·1 c.c., 3rd day ·2 c.c., 5th day ·3 c.c., increasing in this way until a dose of 1 c.c. was reached.

In our work this system of dosage was followed in most of the cases but only up to the ·5 c.c. dose, for this dose was, as a rule, sufficient to stop the symptoms.

The patients were examined before the treatment was given, during treatment and after treatment up to a period of weeks or months, so that the immediate effects and late effects of treatment could be judged. Since the symptoms are almost entirely subjective the chief evidence of improvement or otherwise was the patients' own statements. Since most

of the patients were simple village people, they were requested to state the degree of improvement if any, in terms of annas per rupee, a simple traditional method in India. [For the sake of readers in other countries we may state that one rupee is sixteen annas—Editor.]

Types of cases treated.—Unfortunately we had only one case of leprous neurities of the severe acute-type, but in this case the results were very good (see case 5). The rest of the cases, 35 in number, were of the chronic tpye. The patients described their symptoms very graphically saying 'Keero chabte (insects bite), 'Keere chalte, (insects crawl) We use the terms 'pin pricks' and 'formication' for these somewhat different sensations which were often both present. The majority of the patients complained of insomnia due to these symptoms which are usually aggravated at night.

Notes on typical cases.—The following brief case notes of a few of the patients are illustrative of our results good and less good.

1. B.D.—N_3 Case. Complained of 'pin pricks' and formication in both hands and both feet. These symptoms were accentuated at night 0·1 of cobra venom was given. This dose was increased by 0·1 c.c. every alternate day until 0·4 c.c. was given, after which patient claimed to be free of symptoms.

2. S.D.—N_3 case. Complained of formication and 'pin pricks' all over his body. These symptoms were especially bad at night and often the patient was unable to sleep on account of them. Claimed to be fully relieved after the third dose of venom which was only 0·3 c.c. Seven months later patient was questioned, and he claimed to be free of symptoms.

3. M.R.—C_2N_2 case. Complained of severe tingling and formication. After the 0·2 c.c. dose he claimed eight annas in the rupee or 50 per cent improvement. His last dose was 0·6 c.c. after which he claimed 12 annas improvement or approximately 75 per cent. He interviewed two months later at which time he stated that he had very few symptoms.

4. B.R.—C_2N_2 case. Complained of 'pin pricks'. After the 0·2 c. c. dose patient claimed 4 annas improvement (25 percent) After the 0·5 c.c. dose symptoms were almost completely relieved. Questioned after two months, patient stated that he had practically no symptoms. Four months after this he stated that symptoms were again appearing but not so severe as prior to injections.

5. EII.—C_2 case, was admitted to the hospital ward with excruciating pain from a little above the elbow joint to the hand. This was bilateral. Patient was very sensitive to the gentlest palpation of the ulnar nerves. Both the ulnars were moderately enlarged, and she could not move her arms on account of pain. Local treatment by heat and mag. sulph compress gave no relief, Aspirin and ephdrine by mouth gave only very temporary relief. Morphine had to be used, but with only temporary effect.

On 8-10-37 Cobra venom 0·1 c. c. with no relief.

On 11-10-37 Cobra venom 0·3 c.c. with no relief.

On 12-10-37 Cobra venom 0·4 c.c.

On 13-10-37 Slight relief along left ulnar. Is able to move her arms more than before.

On 15-10-37 Diathermy to right elbow regions—no marked effect.

On 19-10-37 Cobra venom 0·5 c.c. Relief almost dramatic. Pain along both ulnars practically gone. Patient cheerful.

On 20-10-37 Patient had no pain.

During the time of acute symptoms patient showed slight evening rise of temperature. Temperature reached normal on the 15th.

Since diathermy had been given only one side on 15-10-37 it can be discounted as a possible cause of relief for both sides. One month later the patient was questioned. She had absolutely no pain, and no evidence of permanent nerve damage.

Summary of results obtained in 35 cases.

1. The following table shows the immediate results of treatment.—

Marked improvement (75 per cent or relief)	... 17
Considerable improvement (50 per cent to 75 per cent relief)	... 15
Slight improvement ...	... 2
No improvement ...	... 1
	35

2. Relapse followed in 9 cases after a period of two months without treatment. In one case of relapse, weekly injections had been given. In another case of relapse, symptoms were worse than before the treatment and the Kahn test gave a strongly positive result. Treatment by arsenicals, and by protein shock induced by sterile milk injections was followed by relief.

3. Usually the first relief was noted after the ·3 c.c. dose and the maximum effect after the ·5 c.c. dose.

4. No toxic symptoms attributable to the venom were noticed. In two cases, however, after several injections, evidence of lepra reaction was seen.

Conclusion.

We are of the opinion that cobra venom has a definite place in the treatment of leprous neuritis. It has given us far better results than anything else we have tried.

REFERENCES.

1. *Chopra, R. N., and Chowhan, J. S.*—Indian Medical Gazette, Vol. LXXII, No. 6, p. 339, 1937.
2. *Monœlesser.*—Quoted by Chopra and Chowhan.
3. *Kellaway, C. H., and Holden, H. F.*—Australian Journ. Exper. Biol. and Med. Sci., Vol. X, p. 167, 1932.
4. *Macht, D. I.*—Compt. Rend. Soc. Biol. Vol. CXX, p. 286, 1935.

In Lighter Vein.

BY AN EXAMINER.

Below we publish an answer paper in full given by a candidate at an examination in Materia Medica held recently (with apologies to the candidate):—

Q. 1.—Describe the action of digitalis on the mammalian heart. How does the action differ from that of quinidine in auricular fibrillation?

A. **Digitalis on the mammalian heart.**

It is the most important and useful drug for the heart and which is generally used in the diseases of the heart. Inflamation of the heart either endocarditis, myocarditis and pericardis this drug is used without any bad effect. In the early cases of the inflamation it is most useful, and subsides the inflamation. In these inflamation the power of the heart is decreased so these are used to increase the power of the heart muscles. It is generally used in the valvular diseases when the power of the heart is less in pushing the blood to the circulation. When the backward pressure occur in all diseases of the circulation then it is the most important drug to be used. Dilatation of the heart during to the valvular diseases when occures it is used to decrease the dilation. Hyper trophy of the heart either due to valvular disease or due to inflamation of the muscle digitalis is used. This drug is not used when there is heart block or auricular fibrilation, because the heart will stop, due to the obstruction in the flow of blood.

In other diseases of the lungs when the heart is going to be failed in the last stage of pneumonia, when the pulse become slow and weak then the digitalis is given at once to rapid the pulse and strong beats. It should never be given when in the body there is any bleeding tendency. First all the bleeding points controlled and then it should be given. In all diseases where the heart is going to stop this is given. It should not be given when there is high blood pressure or any where aneurysm of the aorta or artery, because it will increase the beat of the heart so much blood will go to that area and it will burst the aneurysm. The dose of it should be increased or decrease according to the age, sex and the condition of the heart. It is in some cases of irregularity of the heart beat it is used.

Quinidine is generally used in the auricular fibrilation safely but the digitalis is never used in this disease. The action of Quinidine on the auricular fibrilation that it will stop the irregularity of the beat of the auricle. By its action the beat of the auricle becomes regular in time. Pulse record will show the regular beats. But by the action of the digitalis the fibrilation is increased and the pulse record will show more irregularity in the beats of the pulse. By the action of this drug in aricular fibrilation of the heart, the heart may stop or fail. Quinidine slower and steady the heart but digitalis will cause rapid heart. Quinidine is used in high blood pressure but the digitalis is in low blood pressure.

Q 2.--Describe the various factors that may modify the activity of a disinfectant. What would you consider to be the most satisfactory drug for the disinfection of the urinary tract by (1) oral administration and (2) local application.

A. **Various factors.**—1. *Strength of the lotion* used for disinfection. This is very important factor and the strength of the lotion used should be according to the organ or system to be disinfected. Suppose the pot permagnate is the lotion and will be used for disinfection. Its strength should be according to the organ. In the begging the dose of lotion should be less and should be increased afterward.

2. *Age and sex.*—Small doses should be used for children than the femal and small in femal than the male.

3. *Condition of the disease.*—If the disease is in the first stage or in early stage, the dose should be less and when it is chroic then the dose should be large.

4. *System to be disinfected.*—Separate lotions for disinfection should be used according to the system you are going to disinfect.

5. *Resistance of the pt.*—It is a very important factor wheather pt. can resist such doses.

6. *Duration.*—It is also very important if the lotion employed is used for long period it will act better than with the slow and rapid.

Drugs for Urinary tracts.

Oral Administration.

1. pot citras.
2. pot acetas.
3. liq Am acetas.
4. liq Am citras.
5. All other alkalies which are used as a diuratic for urinary tract. They causes increase flow of urine and also takes some bacteria or impurities from the kidney or the ureter or the bladder due to the rapid flow. The system is washed.
6. Hæxamin is the most important drug to be used for disinfection of the urinary tract.
7. Sodi Benzoate, Salol and Bariem Borax, cupaiba cubeba, sandalwood and Buchu swea uresi and sandalwood oil.

Local application.

1. *Pot permagnate* is very commonly used for disinfecn of theurethra, Bladder, propune and plansperis externally.

Mercury lotion of various strength are used for the irrigation of the urethra.

Mercury ointment(caloreal ointment) used externally.

Q. 3.—Give an account of the action and mode of use in therapeutics of the hormones of the pituitary gland.

A. **Hormones of pituitary gland.**—These are given by the injections either subcutaneous or mascular in some cases. It is used very largely in the disease of pituitary glands. Hyperpituitrism in this disease the hormones is given. Tetany is used. Vitamin deficiency diseases this is used. It is used in some diseases of the heart when the blood pressure is high. Also in lung diseases pneumonia Brocho pneumonia when the respiration and heart are going to fail this hormones is given.

Q. 4.—Write brief notes on (*a*) Carbon dioxide, (*b*) Barbiturates, (*c*) Anti-

diphtheritic serum, and (*d*) Cinchophen.

A. **Antidiphtheritic serum**.—Is used for the diphtheria. It is a serum of diphtheria bacilus. It is used in 8000 unit for the diphtheria pts. It is a very important serum for the cases of diphtheria. In prophylaxis it can be used safely. Whenever the diagnosis of diphtheria occurs this serum should be given in large doses at once. Do not wait the result of laboratory.

Carbon dioxide.—Is a poisonous gas, which is present in the air in variable quantity. In practice this gas is never used. It enters the composition of air 4 per cent. It forms an important gas in the tissue respiration.

Cinchophen.—Is the new preparation of cinchona and is used in the malaria.

Q. 5.—Mention the important drugs which are opaqne to X-rays. In what doses and in what manner are these used?

A. 1. Bismith
2. Barium } Intestine stomach.
3. Lead.
4. Uroshetra B—Kidney.
5. Shadogal—Gall bladder.
6. Lipoid—Lungs.

Bismith and Barium and lead are used by the mouth. First the pnt. should have a purative—calonel in the evening and saline in the morning, no food should be given in the morning. Then these drugs should be given and after a period according to the place, X-ray should be taken. Barium is some time used in capsule. Doses of these drugs are variable according to the place for X-ray. Bismuth 30 to 60 gr. Barium 1 to 5 grs. lead 2 to 10 grs. But these doses are variable according to the place for X-ray.

Kidney.—Uroshetra B is used for the X-ray of the kidney. The same procedure should be taken to clear the contents of intestine so that they may not interfere with the shadow of the kidney by a calomel and saline. No food should be given. This drug is given by injection direct in the kidney and the X-ray should be taken after a very short period.

Gall bladder.—Shadogal is used for the X-ray of the Gall bladder. Same procedure is taken for intestinal contents. Shadogal is given by two or three spoonful.

Lipoid for the X-ray of the lungs. This drug is used when we want to have the X-ray of Bronchiactasis. The pnt. should lie on the same side where this disease is. The drug is taken by the mouth or nose and it will perform a shadow in the Bronchiactasis.

A Case of Mesentric Cyst.

BY V. S. RAMACHANDRAN, M.B.B.S.,

House Surgeon, General Hospital.

Natesan, a Hindu male, aged 30 years, coming from Tirutani, was admitted into Major Sangham Lal's wards on 31st May 1938 with a complaint of a painless swelling in the abdomen of two years' duration.

There was nothing relevant in patient's family history. He was a non-vegetarian. No history of trauma or gastro-intestinal disturbance was obtained.

The present complaint of a swelling in the abdomen had been present along with a right-sided inguinal hernia for the past 2 years. Patient was operated on for the hernia 3 weeks back elsewhere. Micturition was normal. Appetite has been good. There was no history of cough.

Patient was of an average build, not anæmic and with a clean tongue. The following clinical points were made out on examination:—

Abdomen. A large swelling visible on the left side of the abdomen filling the flank while the patient lay on his back. On turning over to the right side the tumour could not be visualised. A few veins were prominent on the anterior abnominal wall.

Palpation revealed the cystic nature of the swelling which was itself movable like a half-filled rubber bag, occupying the left hypogastric and umbilical regions. The mobility was across the axis of the mesentery. The swelling was not attached to the anterior abdominal wall. In the knee-elbow position it could be felt hanging downwards. Fluid thrill could be made out. The opposite flank was normal. Liver and spleen were not palpable.

On percussion a dull note was obtained throughout the tumour area with resonance in the back.

Mensuration in the prone position showed 1" greater distance between the left anterior superior iliac spine and the umbilicus than on the right.

No auscultatory signs were present.

Investigations.

Urine—Normal.

Temperature—Normal.

Peripheral blood picture—Normal.

Night blood—No microfilariæ.

Fæces—Nil abnormal.

Casoni's test—Not done.

On the 1st of June 1938 patient was operated on by Major Sangham Lal under spinal anæsthesia.

Operation Notes.—Midline skin incision. Cystic swelling of the size of a No. 4 football—lax, in connection with the mesentery. Swelling lifting up the left leaf of the mysentery and nearly the whole mesentery of the iliac colon. Removal of the cyst being out of question, the fluid was aspirated. 82 ozs. of Chylous fluid were obtained and the Cyst was marsupialised. Abdomen closed in layers. A portion of the cyst wall and the fluid were sent for pathological, bacterio-

logical and bio-chemical analyses respectively.

Reports.

Culture—Sterile.

Fibrous wall of the cyst shows evidence of chronic inflammation

Microscopically—Fat globules present, no microfilariæ.

Cyst fluid—Total fat 736 mgms. per cent.

Unsoaped fat—248 mgms. per cent.

Free fatty acid—79 mgms. per cent.

Neutral fat—168·9 mgms. per cent.

Cholesteroal—133.3 mgms. per cent.

Progress and result.—Patient went through a very satisfactory period of convalescence and was discharged on the 19th of June.

I feel very grateful to Major Sangham Lal for permitting me to report this case and also to Dr. C. Raghavachari for the kind assistance he lent me in compiling these notes.

An Analysis of 1,500 Confinements in a Country Practice.

BY A. B. DALGETTY, M.D.

Since I have retired I thought it might be of some interest to review the work I have done in midwifery during the past thirty years. There is nothing out of the ordinary in this record, which I am sure could be matched by scores of my colleagues up and down the country, but the general practitioner is, for the most part, a silent member of our profession, more apt in deeds than in words, having little inclination and less time to record his experiences.

My cases have averaged fifty a year; about that number in the earlier half and below it in the latter half of the time. There was no midwife or district nurse for twenty-five years of the period under review, and the only help that one got was from a handy-woman or from an obliging neighbour. Such a state of things made the work more exacting for the doctor, but he gained self-reliance and learned much that he might otherwise have missed.

I was fortunate in not having, as a rule, more work to do than could be done decently and in order, so that there was no temptation to hasten a delivery merely to save time. I was always glad the next day that I had waited an extra hour the night before rather than hurried matters on by the use of forceps when they could be avoided.

Difficult Labour.

Of the 1,500 cases. ninety required instrumental help—that is, 6 per cent —and of these fifty-seven were primiparæ. One of the latter refused to have an anæsthetic. When younger she was inclined to be hysterical, and such patients are said to be less sensitive to pain; at any rate she bore the operation without a murmur.

There were twenty-eight breech presentations, or nearly 2 per cent, which seems to be a fair average. There is hardly any condition in the parturient woman which gives the doctor more bother than a breech presentation in a primigravida. The books speak *lightly of turning in these cases, but in practice it is by no means easy to perform or to maintain after it is done.*

Occipito-posterior positions were met with in twenty-four cases—that is,1·6 per cent; some of these were rectified, others were delivered with only a little more delay than usual. The oldest primipara was 42 years of age, the youngest 14. There were fifteen pairs of twins, or 1 in 100. The heaviest infant weighed 13 lb There was one transverse presentation which had lasted several hours before I was called; consequently the uterus was in a state of tonic contraction; the child was dead, but the mother did well.

Complications in Mother and Child.

Of the complications met with, two patients had partial placenta prævia. and in eight the placenta had to be removed by hand; all made a good

recovery. One woman, who bore twins, developed puerperal insanity and had to be sent to a home; she recovered in due course. Incidentally, one of the twins was born in January, the other in February. Pernicious vomiting occurred in two cases; one of the patients had a premature infant which died, but the mother recovered; the other died in spite of bringing forth a healthy child.

The following complications and abnormalities of the newborn infant were met with: three had depressed fractures of cranial bones, which Nature completely restored; one had a fractured collar-bone; one had six fingers on each hand. There were three cases of hare-lip, and three with hare-lip and cleft-palate combined. One child had an umbilical hernia and one a spina bifida—the latter lived only three weeks. Two anencephalics were born alive. One infant, with a very long cord, had "looped the loop" and tied a knot, but no harm was done; another, with a very short cord, was shot suddenly into the world and the cord snapped close up to its abdomen.

An unmarried mother was taken ill with no one in the house. She had her baby while standing on the kitchen floor, so the cord snapped close up to the infant. Fortunately the vessels curled up firmly and there was no bleeding. Both did well. One cool-headed woman, grown tired of waiting for the doctor, had got a pair of scissors and a piece of tape and solved the difficulty herself. A tinker-woman was delivered actually in a dry ditch by the roadside, and afterwards carried to a barn near by for the night. Next day I passed the family on the road, the mother tramping along with the baby on her back. Such are Nature's compensations.

Puerperal Fever.

Two cases of puerperal fever occurred in the series. One was a four-para living in a two-roomed cottar-house. When I arrived the baby was being washed by a neighbour who had been present at the birth, and the placenta was in the bed. No examination was made by me, and there is no doubt that the neighbour had not interfered in any way. The mother got up on the eighth day and seemed all right, but three days later she became fevered and had to return to bed; she died eight days afterwards of puerperal fever.

The second case was a primipara who had come to live in the house occupied by the first patient. The two families were not related in any way; the furniture and surroundings were all different, and thirty-two days had elapsed between the two births. This woman unfortunately had albuminuria and she bore twins, There was no difficulty at the birth and everything seemed normal, but she developed fever and died on the eighth day. I have never been able to account for the infection in the first case; nobody could be blamed so far as I could see. And the second case, was it a pure coincidence, or were the two causally connected? To complete the story I should add that a third woman was brought to bed in the same room of the same house some months later, and I am glad to say all went well.

Two Guiding Principles.

My methods have been simple and might be summed up in two words—patience and non-interference. So long as there was some progress, however slow, and the mother and child in good condition. I let things alone. It ate up time and patience, but in the end it was worth it.

Anaesthesia and Analgesia.

Very few of my patients have gone through the last two hours of their travail without an anaesthetic, and that always chloroform. What a recuperative effect has a whiff of chloroform upon the suffering mother: it slows the pulse, calms the anxious mind, and gives her fresh vigour to go on. A few deep snores and she wakes up thinking that she has been asleep for hours. The quietness is also a relief to the listening relatives, and, be it said, to the anxious doctor. My stock phrase was, "Take a good whiff of this; there's nothing to be afraid of." Scopolamine-morphine I have used, sometimes with excellent results, but care has to be taken not to give it too near the end of the second stage. The newer analgesics I have never tried.

Such is the brief record of thirty years' work. It is simple to tell now, but only those who have gone through it can appraise the excursions and alarms, the weary waitings, the anxious moments, and the mental and physical wear and tear which such work entails.

—*Supp. to B. M. J., May 21, 1938.*

COOPERATION.

(The Madras Medical College Cooperative Club, Ltd.)

FOWLER says that hyphens in the middle of words are no ornament. And particularly so in cooperation. The difficulties of pronouncing the different components and its full import can never be expressed if the hyphen gets after the Co. It is a corporate body this word, and its meaning cannot afford to have a split even in the word that conveys it.

It is not our intention, however, to go into the grammar of cooperation during the course of this short article. The demands of cooperation and its advantageous applications as far as we are concerned are alone to be dealt with here.

United is but a near synonym wanting the drive of cooperation. Cooperation demands strength, purposefulness, and attainments. It requires a number of individuals acting for a common benefit. It is not a new idea. Unlike capitalism, socialism, or communism cooperation is orthodox, old, and it has no glamour. It is constructive, essentially meant for the common, as for the individual benefit.

No wonder we find its successful application in many a social, commercial, and financial project of to-day. And so has it pervaded, this idea of cooperation, in its own humble way without noise and without show, as ever showering its benefits in the Madras Medical College in the shape of a Cooperative Club. Why and how shall we keep it and foster it?

During the course of July 1938, the first month of its inception, to such of those who have had anything at all to do with the Club, a part at least, of the 'why' should be evident—its economic aspect. Wholesale purchase and distribution and division of profit among the purchasers is obtained by cooperation It means doing away with the middle man. To get into a little more detail, during the month of July, in an aggregate of one thousand nine hundred rupees worth of medical books distributed at an aggregate of one hundred and sixty-five rupees less than the current retail price, the Club itself has made a profit of thirty-five rupees excluding the cost of establishment. This was achieved starting with a capital of one hundred and twelve rupees

LEST WE FORGET

Dr. N. ISWARAN, M.B.B.S.

Dr. N. Iswaran joined the Medical College in 1929 and passed out of the college with flying colours in 1935. He received the Johnstone Gold Medal, being the best out-going student of the year, and had the unique honour and distinction of getting a First Class in the Final Year after a lapse of nearly a decade. He was known to me ever since 1930, and every one who has known him will acknowledge that he was of a very amiable disposition. He was an intelligent and diligent young man and had all the qualities that make up a man of character. As a doctor he had a very kind heart which made him beloved by the patients. To add to these he had the gift of being a born orator. His sudden passing away after an acute illness has been a great shock to his relatives and friends, and we have lost in him in particular a nice and lovable soul.

Death the leveller takes away the fairest of jewels. May his soul rest in peace!

D. SUNDARESWARAN, M.B.B.S., L.O.

and a total membership of only thirty-six on its rolls. Further evidence of the strength of co-operation is seen in the daily reduction of the local retail prices. The very dealers who, only the other day, refused any sort of help or concession when approached in connection with the purchase of books, are to-day dogging our doors with books, for our patronage. And yet there are only just over 200 members in a college of about 800 students! What can we not do, if we are all united?

It would seem as if we are attributing too much to the few rickety almirahs with note books and tapes. It is not so. It implies that, if we can combine, we can get our necessities at our own premises and at a far cheaper price. In this venture we attain an advantage because of the strength of our unity. Here is the opportunity for all to combine for an economic advantage. The essence of unity is here with a purpose. Shall we not all join and cement a fraternity in our college days?

To the sister institution in Royapuram we give an enthusiastic welcome if they could form a union and affiliate with us. With their added strength we should be able to procure many a facility.

Meanwhile, every student in this college should make it a rule to get all his books through the Cooperative Club. If it has the patronage of everybody there should be no difficulty at all in getting books, instruments, etc., at even cheaper rates than at present. There can be no personal prejudices in cooperation. It is as much yours as it is the other man's. It wants your patronage as it wants that of anybody else. It is constituted under the most democratic principles. Everybody must make it a point to buy his requirements from the Club only. Even if it is a matter of a little inconvenience, trouble, or even delay we must be tolerant; because it is yet so young and practically managed by the students.

We hope that, with the patronage of the entire students of our College, with the support and advice of Lt.-Col. C. M. Plumptre, our beloved Principal, Dr. S. Ramakrishnan, and Mr. Veeraraghavan, and the good-will of all the staff members who have so enthusiastically supported it with money and suggestions, the Madras Medical College Cooperative Club will grow from strength to strength into a permanent institution of usefulness.

College Comments.

It is a great relief to find ourselves free at the end of the College year, and wish good-bye to everybody for the time being—friends and staff—and proceed to render an account of our Stewardship of the *Medical College Magazine* the only vociferous weapon to champion our cause. The Editorship of a College Magazine is indeed a difficult task! Thank Heaven, this is our last publication for the year. No more trouble to collect articles, no more promises which, we find,were made only to be broken, no plausible excuses to encounter, no "hide and seek" business or mere verbal sympathy. It thrills us to review the year that is fast slipping away beneath our feet. The first issue easily saw the light of day. It summoned no unusual aid; no stimulants were necessary to whip up energy. It was all so easy.

Time rolled on swiftly, until it was time for the delivery of the 2nd issue.

True to nature, enthusiasm waned to freezing point with the progress of time. None seemed interested in the making of the second issue. No contributions came: the Editor was languishing for want of material. Our appeals werelconsidered rather a nuisance than a necessity, repeated appeals elicited but more verbal promises. There were some, generous enough to raise hopes and then courteously apologise in the end. The time for examinations was a happy excuse to a few but there were still others who would never even say "I am sorry", but tried to play the old game of "hide and seek". Let us hope history will not repeat itself.

Time has schooled us to become quite accustomed to such phases, but set us persistently to clog their footsteps until we were given the much longed-for articles.

The second edition, at last, was ushered into the world.

Then the prospect of the last edition stared us in the face. Our frantic appeals were ignored. Even the S. O. S. signals brought us no response. We concluded that something is wrong somewhere! By all rights, the contributions should come more from the collegians than from the staff. After all it is a students' affair! It is a pity to find that extraordinary and interesting cases find their place in other Medical Journals. "Charity does not begin at home" here, and it is a relief to find, we have the freedom of the press to quote "Chapter" and "Verse" and fill our pages from those privileged journals.

To save ourselves from these difficulties which were almost amounting to a tragedy, we sometimes wished we were in the enviable position of the "Editor-in-chief" of a big News Organisation—he is always brought, after by a crowd of writers and is therefore, reputed to be as inaccessible as the Grand-Dalai-Lama.

On second thought we believe that to be a successful Editor one has to possess a stout heart, strong nerves, a patient disposition and an ever active body.

On behalf of the Editorial Staff I thank all those who were good enough to respond to our invitations to send in contributions and to make the Magazine a success. Wishing the New Editorial Staff every luck!

J. ASIRVATHAM.

"IN MEMORIAM"

Mr. K. VITTAL KUDVA.

It is with profound regret we record the death on 22nd April 1938 of Mr. K. Vittal Kudva, student of the 1st year of our College. In him the College has lost a promising student who by his hard and honest work would have risen high in the profession.

Born in Puttur in the year 1916, Mr. K. Vittal Kudva passed his school-final in the Board High School of the same place. After two years of study in Intermediate in the Government College, Mangalore, Mr. Kudva joined the Medical College. Here he was working in the first year when he became subject to a prolonged illness to which he succumbed after 10 months.

During so short a time in our College, Mr. K. Vittal Kudva, impressed every one whom he came across, with his work and honesty of purpose. Kind by nature and constant in friendship, Mr. Kudva had gained a large circle of friends. It is a pity that so useful a career should have ended so soon.

"Whom the Gods love die young."

Basal Narcotics.

BY ARCHIBALD D. MARSTON, M.R.C.S., L.D.S., D.A. (Eng), L.R.C.P. (Lond.),

Senior Anæsthetist to Guy's Hospital and Lecturer on Anæsthetics to Guy's Hospital Medical School, London.

The outstanding feature in modern anæsthesia has been the introduction of basal narcotics.

These have been used with progressive frequency during the post-war period, and have secured a well deserved popularity with surgeons, anæsthetists, and the lay public.

Perhaps their greatest contribution to modern medicine is their effect upon psychic trauma. Induction of anæsthesia in an operating theatre, and transport thereto, had always produced a good deal of apparent or concealed fear and apprehension in the patient.

With the aid of basal narcosis this ordeal is reduced to a minimum, and patients are better able to withstand the effects of surgical shock.

Induction of anæsthesia is also rid of any struggling and its attendant strain upon the respiratory and circulatory systems.

A third advantage is the fact that nitrous oxide gas and oxygen will often be sufficient to complete the balance of anæsthesia.

It is a distinct advantage to maintain anæsthesia by these means, because nitrous oxide and oxygen has the virtue of being the least harmful of anæsthetic agents.

This is only true if nitrous oxide is given with enough oxygen to supply the metabolic needs of the body. In conjunction with a basal narcotic it is possible to administer nitrous oxide with adequate percentages of oxygen, and also to secure a more tranquil and relaxed anæsthesia.

Another advantage is post-operative quiet, the patient remaining in a sleepy state for some hours.

These advantages have created a new era in anæsthesia, which is now rid of its former terrors; and it is a notable fact that patients who have had a basal anæsthetic do not, as a rule dread a repetition of the experience.

The basal narcotics are not universally applicable; with the exception of paraldehyde they all lower blood pressure, depress the respiratory centre and render the reflexes of the upper respiratory tract less brisk than usual.

Thus in wasting diseases, asthenic states, abnormally low blood pressure, and in those operations requiring a quick return of the laryngeal reflex, basal narcotics must be used with caution.

In operations where much blood loss or surgical shock is expected, only part of the normal dose is given.

The effects of shock are increased in deep basal narcosis, and recovery may be retarded.

This is often due to depression of the respiratory centre, and if pulmonary ventilation is inadequate, sequelæ such as massive collapse or hypostatic congestion may occur.

Careful nursing is required after basal narcosis, so that any symptoms of respiratory failure may be dealt with promptly.

A clear air way is essential, and may be secured by insertion of an artificial airway, nasal catheter, or by traction on the lower jaw.

If cyanosis should occur in the presence of a free air way, a mixture of carbon dioxide 7 per cent, and oxygen 93 per cent should be administered.

As an alternative, there are a number of drugs, which may be given hypodermically or intravenously, according to the urgency of the symptoms.

Possibly the best of these are the analeptic aqueous solutions of camphor derivatives known as Coramine and Cardiazol.

These proprietary drugs, and their exact pharmacology remains a little obscure, but clinically they are undoubtedly efficient. In serious cases they may be used in large doses of from 5 to 10 c.c. at a time. Other injections are Icoral (Bayer) and Alpha-lobeleine; these may be used as alternatives.

Combinations of pre- and post-anæsthetic medication with basal narcotics may lead to cumulative drug action.

It is well to remember the hypothesis of Burgi, which states: "Drugs having the same pharmacological action summarise their therapeutic effect when given together, but drugs of different pharmacological actions increase their activity to an extent for greater than the sum of their actions, when given separately."

Thus the routine administration of large doses of pre-anæthetic drugs is to be deprecated, and post-operative medication should be withheld until the major effects of the basal narcotic have definitely waned.

Cases of fatal overdose with basal narcosis are fortunately rare, and an examination of the records of such reveals the fact that the basal narcotic *per se* is not usually the deciding factor but one of the following:—

(1) Too great pre-and post-operative medication.

(2) The superimposition of sudden, massive or prolonged surgical shock.

(3) Lack of good nursing and treatment during the post-operative period.

Basal narcotics are numerous and may be divided into three groups:—

Group I.—Avertin.
Group II.—Paraldehyde.
Group III.—The Barbituric derivatives.

(*a*) Amytal sodium.
(*b*) Nembutal.
(*c*) Sodium soneryl.
(*d*) Pernocton.
(*e*) Evipan sodium.
(*f*) Sodium pentothal.

The basal narcotics are administered in one of three ways:

(1) By the mouth.
(2) By the rectum.
(3) Intravenously.

The route by which each drug may be given has a considerable influence upon its choice.

With such a wealth of narcotics available, each with special merits, it is a mistake to use any particular agent as a routine. Each case should be considered separately and the best choice made.

Group I

Avertin—$CBr_3\ CH_2\ OH$ (Tri-brom-ethyl-alcohol).

This is a white crystalline substance which mixed with amylene hydrate, forms the avertin fluid in common use.

The precise mode of manufacture of avertin has not been published; it is a trade secret, but is known chiefly to consist of the reduction of bromal with yeast.

One c.c. of the fluid contains 1 gram of avertin, and the dose ranges between 0·08 and 0·12 gram per kilogram of the body weight. The average or "Bayer standard dose" is 0·1 gram per kilogram body weight, except in obstetric practice, where a proportion of 0·075 gram per kilogram is usually employed.

Reliance on the weight rates will not give the best results; it is necessary to examine the patient, and only experience will enable you to find the optimum dose.

As a general rule, young people need more than old, fat people require less than thin, and nervous subjects take more than those of placid temperament.

In wasting diseases, where extensive dehydration of tissues has occurred, the weight is a fictitious one and it is usual to give a dose not exceeding ·08 c.c. per kilogram of body weight.

In obese subjects, it is seldom necessary to exceed the 0·01 c.c. does for 12 stone 2 lbs., *i.e.*, avertin mm· 130 in 308 c.c. of distilled water.

Avertin, usually dispensed by a pharmacist, should be freshly prepared and supplied for use in a vacuum flask. The mixing of avertin fluid with distilled water is simple but needs care, if two errors are to be avoided. If the distilled water is too cool, the avertin fluid will not dissolve, but is precipitated as a crystalline deposit.

On the other hand the water must not be heated beyond 40 deg. C., lest the avertin be decomposed with formation of dibromacetaldehyde, even slight traces of which will cause damage to the epithelium of the bowel and much pain and discomfort to the patient.

There is an obligatory test, and this consists of the addition of two drops of a 1: 1000 aqueous Congo red solution to 5 c.c. of the 2½ per cent. avertin solution. The resulting colour must remain bright orange red. Improperly made solutions turn the colour dull to blue, and must be discarded.

Administration.

The patient is placed in the left lateral position with the head com-

fortably placed upon a pillow. The avertin is slowly poured into a funnel attached to a small rubber catheter, which after lubrication is inserted not more than 4½ inches into the rectum. Three-quarters of the dose are given slowly over a period of six minutes, if the patient sleeps during the next ten minutes no more avertin need be given. If sleep is not produced, the remaining portion of avertin is given. This technique is an improvement on the routine administration of the whole dose, as it avoids too deep a basal narcosis, and allows greater range for the maintenance anæsthetic.

Most patients go to sleep without excitement or distress, and the experience is described as a pleasant one.

Respiration becomes more shallow than normal, blood pressure falls by 10 to 15 m.m. of Hg, and the pulse rate increases.

Narcosis reaches its maximum in about 30 minutes and will continue in a diminishing degree from two to four hours.

The conjunctival reflex is absent, but the corneal is usually just present. Bloomfield has pointed out that if the corneal reflex be absent the patient is not usually in a stage of surgical anæsthesia; he will move and his musculature become rigid if stimulated.

Avertin is excreted by the kidneys after detoxication by combination with glycuronic acid (Endoh).

Avertin is antipyretic, and during recovery shivering may sometimes be observed. It is usually transitory, and the patient should be covered with warm blankets.

Contra-indications.

There are few absolute contra-indications to avertin, and it has secured a well deserved reputation for safety and reliability.

It should be employed with caution and only in small doses in patients suffering from low blood pressure, renal disease or low basal metabolic rates.

In regard to hepatic disease, and particularly hepatic insufficiency, observers vary in their opinions. But as avertin is known to be detoxicated by combination with glycuronic acid, it seems wiser to abstain from its use in these cases.

Avertin cannot be efficiently used in cases of rectal incontinence, and is not usually employed for operation in or around the anus, rectum or perineum.

Group II

Paraldehyde—$C_6H_{12}O_6$

This is a product of polymerisation of acetaldehyde.

It has a peculiar and not pleasant odour, is mainly excreted by the lungs, and is soluble in 1 in 10 of water.

It is easy to dispense and administer, and is perhaps the safest of the basal narcotics.

This safety rests in the fact that in correct doses it has little, if any, effect upon either respiration or circulation.

Thus it is the anæsthetic of choice in cases of very high or very low blood pressure, also in wasting diseases, and asthenic states with a low metabolic rate.

The dose usually employed is one drachm per stone of body weight.

Mode of Administration.

The paraldehyde solution is heated to body temperature and is slowly run into the bowel, about three-quarters of an hour before operation.

The patient falls into a light sleep, which usually enables gas and oxygen to be given to complete anæsthesia without the patient being roused.

Rowbotham has greatly increased the usefulness of this drug by combining its use with other sedatives.

Group III

The Barbituric Derivatives.

The first of these was used on the Continent shortly after the Great War, and was known as Somnifene (allyl-isopropyl-barbiturate). This drug had the serious disadvantage of causing muscular and nervous excitement, and was abandoned in favour of amytal sodium, which was used by Zerfas, of Indianapolis, in 1928, and was the first barbiturate to be employed to any extent in Great Britain.

Amytal Sodium (sodium-iso-amyl-ethyl-barbiturate).

Is usually given intravenously in a 10 per cent solution, at a standard rate of 1 c.c. per minute, until the patient becomes drowsy or just sleeps.

In normal subjects barbituric derivatives are almost completely broken up in the body, being oxidised in the liver and mainly excreted by the kidneys.

A small minority of patients are sensitive to the barbiturates and may show symptoms of overdose, the four chief effects of which are:—

(1) Depression of the respiratory centre.

(2) Massive and sudden fall in blood pressure.

(3) Pulmonary œdema.

(4) Broncho-pneumonia.

Such symptom occurred with a disquieting frequency in the case of amyl-sodium, and it was soon given up in favour of nembutal, which is excreted much more quickly.

Nembutal (sodium.ethyl-methyl butyl-barbiturate).

Oral Administration.

This may be given by the mouth in the form of capsules containing 1½ grains. The normal adult dose is 3 to 4½ grains given 1½ hours before operation.

In the case of children, the normal is gr. 0·6 per stone of the body weight.

This method is the most unreliable means of securing basal narcosis. No uniformity of result can be attained, usually the patient is not quite unconscious, but sometimes they appear dangerously deep. If it is possible to use a trial dose before the day of operation this may give valuable information.

Intravenous Administration.

Nembutal is a white powder and is mixed with distilled water to form a 10 per cent solution. The standard rate of injection is 1 c.c. per minute,

and just enough is given to secure loss of consciousness. Although safe, nembutal is somewhat unreliable in its action. Sometimes a patient is too light and inclined to be restless, or else too deep, and narcosis persists too long.

The average result from nembutal does not compare favourably with that secured by a combination of morphia plus a minimal dose of evipan or sodium pentothal.

Nembutol may be given to children as a rectal suppository, the dose being about 1 gr. per year of age. The suppository is given three hours before operation, and this method has been claimed to produce greater uniformity of narcosis than the oral route.

On no account should intravenous nembutal be combined with the oral or rectal route lest overdose result.

Pernoclon (sodium - 2 YB - bromallyl-barbiturate).

This drug is a secondary salt of barbituric acid, and has the advantage of being ready mixed.

This seems the only advantage, and in the opinion of most anæsthetists it has the disadvantage of sometimes causing vomiting, restlessness and an undue length of action.

The drug was first introduced in Germany as long ago as 1927, and although highly praised by a few anæsthetists, it is little used at the present time.

The More Recent Barbiturates

The most popular basal narcotics amongst the barbiturates, at the present time, are Evipan and Sodium Pentothal.

Both of these are speedy in action and excretion, and are more safe and uniform in their effects than the earlier members of the series.

Evipan (sodium salt of n-methyl-c-c-cyclo-hexamyl-methyl-barbituric acid).

This is a white amorphous crystalline powder, one gram of which is mixed with 10 c.c. of distilled water to form a clear solution.

Evipan can be used as a complete anæsthetic, but we are now concerned with its use as a basal narcotic.

For this purpose quite a small dose is required, and may be combined with a previous injection of morphia or omnipon. The advantage of such premedication is to avoid muscular spasm, and to enhance the effect of Evipan.

The usual rate of injection is one c.c. per 15 seconds in the first minute, a pause is then made to be sure the patient has lost consciousness; if this is not the case a further 1 c.c. is added in each 10 seconds until the desired result is attained.

Pentothal Sodium (Thio-barbiturate 8064).

This agent is an alternative to Evipan, each drug having advantages peculiar to itself.

Thus with Pentothal you get a more speedy induction and recovery, muscles are relaxed and rarely associated with spasm or twiching, and the patient has fewer after effects.

Pentothal is useful for short orthopædic operations and as a basal narcotic enables a nervous patient to be more rapidly and smoothly put to sleep.

Blood pressure falls less with Pentothal than Evipan, but depression of respiration is greater.

This depression of the respiratory centre may need treatment with oxygen and carbon dioxide, and certainly contra-indicates the administration of Pentothal in any but the lying down posture.

Care must be exercised in the actual injection of Pentothal, because of its irritant effect if it leaks into the local tissues.

For this reason unless the selected vein be simple to puncture, or if the administrator has little experience, it is better to use Evipan as a routine, reserving sodium Pentothal for special cases.

Mode of Administration.

Sodium Pentothal is a yellow crystalline powder supplied in ½ and 1 gram ampoules which are mixed with 5 and 10 c.c. of distilled water respectively. A straw coloured fluid results which gradually clears so that no precipate remains.

A rather peculiar odour is noticed to emanate from the mixed fluid, and patients will sometimes complain of this smell during induction and even after recovery.

The drug is usually given five seconds slower per c.c. than Evipan, so that 3 c.c. are given at the end of the first minute, by which time unconsciousness has usually occurred.

A tourniquet of some kind is necessary to suitably distend the chosen vein in the antecubical fossa.

The Dickson Wright splint is very useful for this purpose; it keeps the patient's forearm still and has an inflatable cuff which forms a convenient and comfortable tourniquet.

Treatment of Overdosage.

To the measures previously mentioned, one may add repeated lumbar puncture, in the case of the barbituric derivatives.

—*The Medical Press and Circular Supplement, May 4, 1938.*

—o—

Auricular Fibrillation and its Treatment.*

Diagnosis.

I do not think I need say much about this. You are all familiar with the condition and generally accurate in the diagnosis of it, but, however expert you become, there are the rare occasions when diagnosis is difficult and where graphic methods should be used to make it absolutely certain. A few cases are sent to the Cardiographical Department by people of experience in which fibrillation has been thought to be extra-systoles, and extra-systoles have been thought to be fibrillation, and sometimes I have great difficulty in coming to any certain conclusion. The two things which are likely to lead to difficulty in this direction are extra-systoles occurring with a rather rapid heart, rate, and cases of flutter where the degree of heart-block is not constant, but varies from time to time so that there is an irregular pulse.

As regards extra-systoles, you know the rule that if you quicken the heart by giving the patient exercise the extra-systoles should disappear when the heart beats more quickly than 100, and that irregularities persisting at a higher rate are probably fibrillation. I think the only occasion when this does not apply is when there is active infection of the heart at the time. Extra systoles are then found at the rapid rate.

The possibility of flutter should be borne in mind when at first feeling the patient's pulse you think of auricular fibrillation, and then, a few minutes later, it is so regular that you wonder how you could have been mistaken. This result is often due to auricular flutter, the regular period having a regular degree of block and the irregular period a varying degree of block. I shall not to-day talk about the treatment of auricular flutter, but there are certain differences in its treatment which makes it important to pick out this small number of cases. It is, of course, a rare condition as compared with fibrillation; there are something like 100 cases of fibrillation for every five of flutter.

On this subject of diagnosis I might add that there are nearly always some signs of congestive failure if a patient has untreated fibrillation. It may be swelling round the ankles, a slightly tender and enlarged liver, or crepitations at the base of the lungs. Recent X-ray work has shown that the congestion spreads out around the pulmonary roots and frequently is recognisable centrally by means of X-rays before crepitations can be found at the base of the lung.

Prognosis.

As regards the prognosis of these cases in their natural course, I have said already that they nearly always develop congestive failure. Generally this is the most important thing, and leads to their downward progress apart from treatment. Occasionally, where the heart muscle is good and fibrillation develops from some almost

* A Clinical Lecture delivered at Guy's Hospital on Friday, 11th March, 1938. by Maurice Campbell, Esq., O.B.E., M.D., F.R.C.P.

chance occurrence, one may find very little incapacity. One or two cases of that kind stand out in my mind. One is a colonel in the Army, who is a good tennis player and has no apparent disability from his fibrillation except that the beating of his heart is unpleasant when he goes to bed at night. Such a story where fibrillation is really the only abnormality of the heart is exceptional, and he certainly would have been a very suit able case for quinidine.

Much more frequently the onset of fibrillation is a turning point in the patient's life, and this applies to the rheumatic heart where the patient has known perhaps since childhood that he had some heart disease, but has not thought very much of it and has not had much trouble, provided he led a rather easy life and not tried to do too much. But the onset of fibrillation will change that, and he will become short of breath and less able to work. That is the sign of gradually increasing congestive failure. It is uncommon for a patient with fibrillation not to go at least a little downhill from year to year, though sometimes there may be a period of years without deterioration.

Another risk is embolism. I expect several of you have seen patients come up to the Neurological Department with hemiplegia which has come on suddenly while they were apparently in good health, and they have been found to have mitral stenosis and fibrillation. An untreated fibrillation is a greater risk from the point of view of embolism than a treated case, and in this sense, too, the onset of fibrillation, especially where there is mitral stenosis, is a serions disadvantage.

Onset.

The great majority of patients under forty will *send for the doctor within two days of the onset of fibrillation, very often within a few hours.* The condition produces such a sudden change in their symptoms, they are so quickly become short of breath, that they are almost certain to be in the hands of the doctor at once. That is why it is important for you to be on the look-out for the onset of fibrillation and to remember that the early weeks are the best time for deciding between the two alternative treatments of trying to stop it with quinidine or of trying to keep it under control with digitalis.

I had an instance of this quite recently. A lady, unaware that she had heart disease, spent the afternoon playing tennis, and later went on to a party and a dance, feeling perfectly fit. That night, after she had been two or three hours in bed, she woke up with extreme dyspnœa and palpitation, and the doctor discovered auricular fibrillation. She had mitral stenosis which nobody knew anything about, and luckily had hardly any enlargement of the heart and a very good ventricular muscle. But she was quite incapacitated from the time of onset of fibrillation, and for some unusual reason it was so difficult to control with digitalis that she did not get back even to easy housework. It has been possible to restore normal rhythm with quinidine, and I think now she feels practically as well as before.

In many cases it is nearly as sudden as that in its onset; indeed, like a broken leg, the onset must be sudden. The only cases where it is difficult to recognise when fibrillation started are

in those older patients with some degree of heart-block from degenerative changes in their A.-V. bundle, who are less immediately aware of the palpitation, and find their symptoms developing more gradually.

Treatment.

Next we can pass on to the actual treatment of a patient in which the diagnosis of fibrillation has been made. The first is to decide whether treatment should be with quinidine, or, as more usual, with digitalis. I am only going to deal with quinidine shortly, but would like to lay down *four rules for you in picking out those cases suitable for quinidine*; *every case which does not fulfil these four conditions is not suitable for quinidine, and must therefore be put on digitalis. In other words, we have to accept fibrillation as permanent and do our best to control it.*

Quinidine Treatment.

When quinidine was first introduced and it was found that it could stop auricular fibrillation it was used rather indiscriminately in all sorts of cases, with the result that many dangers made their appearance and the normal rhythm which was restored did not last very long. Accordingly many people thought it was not a very valuable remedy. It is only of value if you observe strictly some such rules as those that follow :—

1. Recent onset. The shorter the time the patient has had fibrillation, the better the chance of stopping it. The chance is best when the time is measured in weeks; if it exceeds six months it is never worth while using quinidine.

2. The size of the heart. The smaller the heart the more likely that the restoration of normal rhythm will be lasting. It is easy to say that if the heart is only slightly enlarged quinidine is indicated, and if greatly enlarged it is certainly not. But that leaves you with intermediate cases of moderate enlargement, and in some of these it is difficult to decide. Although one cannot give any exact measurement because the patient's size makes so much difference to what his heart ought to be, it is quite a good average that for a patient weighing about 10 stones anything over 12·5 cm. maximum transverse diameter of the heart is to be called moderately enlarged, and anything over 14·0 cm. greatly enlarged, making the case unsuitable for quinidine. With a larger man of 12 stone or 13 stone, something up to 1·0 cm. larger may be allowed. If the heart is well below these figures, then, as far as size is concerned, the patient is suitable for quinidine.

3. Congestive failure. Most patients have some congestive failure; if they have had gross failure, however well they do afterwards, their ventricular muscle must be poor and they are not good subjects for quinidine, and normal rhythm, if restored, is not likely to last. If, on the other hand, failure has quickly responded to treatment with rest and digitalis, and the patient has not got much disability, he is suitable for trying to restore normal rhythm entirely.

4. Embolism. The patient should not have had an embolism at any recent period, because the restoration of normal rhythm is a moment of special danger, as part of a clot in the auricle may become detached resulting in an embolism. Apart from this one risk, I regard quinidine as actually a method of preventing embolism. If we were to take twenty patients where fibrillation has been stopped with quinidine and twenty others where fibrillation has been allowed to continue, even if they have been well treated with digitalis, there will be more emboli in the course of five years among those who did not have quinidine than among those who did. It is quite clear that we are really reducing the risk of embolism, although we may be concentrating the risk at a particular moment.

I have not time to speak about the method of giving quinidine, but I have thought it important to describe those cases where quinidine is indicated.

Digitalis Treatment.

Every other patient with fibrillation requires regular treatment with digitalis for the rest of his life. That is frequently forgotten, both by the patient and, I am sorry to say, by his doctor. There may be a few exceptions, but they are rare. It used to be thought that digitalis also stopped fibrillation, and that when one got a fairly regular rate, fibrillation had ceased. Perhaps this happens once in a hundred times Usually it has had no effect on the auricle, which is fibrillating just as much as before. What we have done by digitalis treatment is to induce such a degree of block in the auriculo-ventricular bundle that the ventricle does not get driven at the fast and irregular rate and is able to give stronger contractions, which are more useful in maintaining the circulation. That is the stage at which things sometimes go wrong; the attack is thought to be over; digitalis is stopped, and in a few weeks, perhaps not for six weeks, the patient is as bad as ever. Then it is assumed, wrongly, that digitalis is of no use in his case. If digitalis were excreted quickly, and the dose taken on Monday were got rid of by Tuesday or Wednesday, that difficulty would never arise, because the patient would realise that his deterioration was due to stopping the medicine, and he would be keen to continue. But the fact that it takes weeks to get rid of any effective amount of digitalis, the system thus remaining under its influence to a gradually decreasing extent over all that time, means that it is often not realised that the two things are cause and effect.

This seems a good moment to take up a few points about the absorption and excretion of digitalis, because successful use of it does depend very much on understanding that the dose is slowly absorbed. If an ordinary patient be put on a dose of digitalis by mouth every day no effect at all will be seen for four or five days. The amount that is absorbed gradually accumulates in the blood. This means that in special cases where urgent treatment is needed other methods have to be employed. But digitalis is even more slowly excreted, and if, after a patient has been balanced with an adequate concentration in the blood, digitalis is stopped altogether, amount in the blood may remain high enough for three or even four weeks to keep the patient well controlled over that period.

That has been described as the cumulative action of digitalis and it has led to much misunderstanding. It has made people think that if you take digitalis regularly there is some cumulative effect, and that sooner or later you must be poisoned. This is not so, because you soon reach a balance where the amount excreted is exactly equal to the amount taken. I have many patients treated successfully with digitalis who have taken the same amount every day for

periods like ten years who have never had any symptoms of digitalis poisoning. It has been popular, to avoid this cumulative action, to order digitalis for so many days in the week and so many weeks in the month, and this method is still popular in France. But it is obvious that it cannot maintain good control during the whole period. If at the end of the third week on digitalis, when the patient is taking the right amount and the control is at its best, if then digitalis is stopped for a week he will obviously not be at his best at the end of that week. It is a less satisfactory method because the patient has his ups and downs; our object should be to find out the amount that will be balanced by the amount excreted and so maintain the best control.

I do not think anybody can give you an answer as to how much digitalis a particular patient needs. That is simply a matter of experiment which has to be done on each patient to get the right control as betwaen his powers of absorption and excretion; but good average figures can be given which work in most people. It does not follow that when fibrillation is controlled by a small dose of digitalis the patient has a specially good outlook, or because a patient needs a large dose that his outlook is bad. That is the general rule with most drugs—your measurement of the severity of a diabetic for example—but it is rather the opposite with digitalis, because if the patient has a bad heart, he very often has bad kidneys, either from renal disease or from passive congestion in the kidneys due to the poor circulation. The kidneys are then able to excrete very little digitalis, so that a small dose is all that is needed for adequate control. Unless there are changes in the conductivity of the A.-V. bundle, this is the only way in which the patient's need for digitalis ever changes. Often the patient is afraid that he may become habituated to digitalis as to opium and that it may cease to be effective, but this is not so. Perhaps one should add one temporary cause of change. Just as the amount of insulin which balances the diabetic well in ordinary periods of health has to be raised during any transient infection, so a patient may need increased digitalis, and it may, for the time being, be difficult to get adequate digitalis control.

Those are general remarks about digitalis which apply to all patients. I think for the rest of my lecture I had better divide them up into particular groups. First of all, we have the patient who is able to get about and comes before you without gross congestive failure, but with some slight signs of failure. There is always need for rest in such cases, though I do not think this should always mean absolute rest in bed. If such a patient be started on 15 minims of tincture of digitalis t.i.d., you can be almost certain that within a week there will be some improvement, and within a fortnight the heart rate will be down from 140 or 120 to 70 or 80 and he will be enormously better. Then you will find whether that amount is quite enough or rather too much, and if you still find the heart rate about 80 after that, probably 15 minims is not going to be quite enough. If it has got down to 60, you need some amount like 10 or 12 minims t.i.d.

One useful point in this connection is that vomiting or nausea is often thought of as the main sign of digitalis poisoning and means that the patient is having too much. Vomiting is also a sign of the gastric congestion from heart failure, and may often be an indication for more digitalis. In a patient with nausea, the heart rate divides those two groups almost decisively. You rarely get nausea from digitalis unless the heart rate is under 70. If you have nausea with a heart rate over 100 it is never due to too much digitalis, and often means that there is gastric congestion from heart failure and that the patient is not taking enough digitalis. Occasionally digitalis leaf is more liable to produce nausea than a preparation such as digitalin.

The next step in a patient of this group is to get him fixed on some amount that he can take more or less indefinitely. There is one general consideration. With many medicines the less you take the better; their object being to get the patient so that he does not need further medicinal treatment. With digitalis it is rather the reverse, and most patients with fibrillation are able to do more and keep fitter on the largest amount of digitalis they can take without getting signs of intolerance, the most usual early sign of intolerance being nausea. An unduly slow heart rate of under 60 often means that we are getting near the point of intolerance, and unless the amount of digitalis is reduced there will be more serious signs of digitalis poisoning. When a patient has signs of over-dosage, it is best not to stop his digitalis altogether over a long period; but if it is stopped for two or three days and then started on a slightly smaller dose a good control is obtained again without a long period of waiting during which the advantages of the previous treatment are lost. It is important, whenever changing the quantity of digitalis, to remember how slowly the patient is responding, and we have to look at the last four weeks and take the average amount of digitalis over that time. It is no good saying when we discharge a patient from hospital that he is well controlled without digitalis if it has been stopped recently, because he is still influenced by the earlier amount he has taken, and will very soon be as bad as ever unless it is resumed. You will find it a good rule to aim at that no patient should be discharged from hospital if any substantial change has been made in the amount of digitalis given during the last fortnight of his stay. You should keep him in until you see whether it is enough or too little.

I have spoken so far only of the tincture, because it is the easiest to adjust correctly by making small changes. But when you are thinking of a patient, who may have to take digitalis for ten years, it is important to get him on to a solid preparation rather than a bottle of medicine, since it may make all the difference to his taking it regularly. I am thinking of some one who wishes to lead a fairly active life, where the necessity of constant recourse to a bottle of medicine is a drawback, rather than the old lady who enjoys her fortnightly rest and gossip at out-patients. Tablets which can be carried in the waistcoat pocket are more likely to be taken regularly, and most patients should be put on some solid preparation for permanent control. There are many different ones, but I mention only two because I have experience of them and not because they are necessarily the only good ones. I do suggest that you should confine yourselves to very few preparations of digitalis, so that you may become really familiar with them, and that you should not use a different maker's digitalis every few weeks because somebody has visited you with samples of it. Mackenzie said that his life had not been long enough to know everything he wanted to know about the tincture of digi-

talis, and that he knew little about any other form of digitalis! so you need have no hesitation in following this lead. The obvious preparation to use is the whole leaf, and *tab. dig. fol. gr.* 1 can be taken as a very close equivalent to 15 minims of the tincture.

The other advantage of the tablets is that they keep more or less indefinitely. In hospital, where there is a big turnover in the dispensary, digitalis will be always sufficiently fresh, and one is inclined to forget that tincture of digitalis does not last. If there is only a small turnover of digitalis, you want to guard against this risk. If you find a patient with fibrillation who is not responding to tincture of digitalis in adequate doses, there are only three possible explanations. The first is that the drug is inactive, in which case some other preparation should be tried. The second is that the patient is not taking the drug; I had a good example of this not long ago, where the doctor had increased the amount of digitalis till it was certainly more than adequate, but the patient still had a heart rate of 140, and finally admitted that he was not taking it, but was throwing it away. The third possibility is active infection at the time. In this last category I would include some cases of hyperthyroidism.

The solid preparation I have mentioned is an excellent one which keeps and suits most patients very well and is quite convenient and also cheap. My only reason for mentioning another solid preparation is that digitalis leaves cannot be made up in very small tablets, the 1-gr. tablets being fairly large, and that they are a little more likely to produce nausea or vomiting than some other forms. A few patients may find that they get nausea before adequate control is established. As an alternative I suggest *digitalin* 1/600 *gr.*, this being the equivalent of about 1 gr. of the whole leaf. It is therefore an enormously more concentrated glucoside, and this very small amount will be adequate. It is important to bear in mind these figures and their correspondence, so that the patient can be changed easily from one to another.

I think those three preparations will be all you need for the treatment of any of these routine cases of what I should call moderate failure. The next thing is the patient who comes under your notice very ill, where the onset of fibrillation has led to grave congestive failure. The patent is either in bed already or you realise that he must be sent to bed immediately. In these cases one cannot afford a week to get digitalis control, and it is important to slow the heart rate much more quickly. Four or five years ago I should have said that the two choices were strophanthin or massive doses of digitalis. Massive doses of digitalis were very popular, under American influences, in the period after the War, and are certainly effective in giving quick control. Instead of 1 drachm a day one gives 6 drachms in a short period. This amount all at once is too dangerous, and various ways have been suggested of dividing it up. One common method was to give 3 drachms immediately, 1½ drachms in four hours, and the remaining 1½ drachms divided into two doses at 4-hourly intervals. One must take into account the weight of the patient, and the figure of 6 drachms for getting complete control applies to someone weighing 10 stone, so that a person of 8 stone would need less, and of 14 stone more.

The alternative was to give intravenous strophanthin 1/200th gr., if the patient had digitalis before, or 1/100th gr. if one was quite sure he had not. This often gives good control and the heart rate drops in six hours, instead of taking seven or eight days. I think that was the only place strophanthin had in the treatment of fibrillation, and it has now been replaced by a new concentrated glucoside of the digitalis groug—digoxin. In my opinion there is now no place left for strophanthin; the permanent control I do not think you will ever get a better result than with digitalis, and in many cases you will get a worse. I carried out a careful investigation with a number of patients with strophanthin and came to the conclusion that it nearly always failed, because there was such a small margin between the toxic dose and the amount which produced adequate control. With digitalis the margin is much greater. With strophanthin you have to get a very accurate dosage because of this small margin, and with some patients you find that the level producing toxic symptoms is actually lower than the level giving adequate control, and it is quite impossible to get the heart rate slow without vomiting or nausea. I would say that the patient on strophanthin was never made better than on digitalis, and often a great deal worse. This at all events saves you having to know much about strophanthin, and enables you to concentrate on getting the best out of digitalis.

With digoxin you can get control quickly and, in many cases, in six or even in four hours the heart rate drops from 140 to 70. It differs from the other preparations in that it is far more quickly absorbed and excreed, so that the difference between the daily dose and the amount that can be safely given on a single occasion is much less. We can call the average daily dose of tincture ¾ drachm, and the amount needed to get control in a single dose 6 drachms. The average amount of digoxin needed daily for full control is 0·75 mgm. or less, and eight times that would be about 6 mgm., which is four times as much as you should ever use in a single dose.

Digoxin can be given both by the mouth and intravenously, and you should not use more than 1·5 mgm. by mouth to get quick control even in a patient who has not had any digitalis already, and not more than 1 mgm. intravenously.

I have not left time to discuss the many other things which turn up in the treatment of auricular fibrillation by digitalis, such as reduction of fluid intake, salt-free diets, and the use of the mercurial diuretics. I would only say that these should not be resorted to until one is sure that rest and digitalis are not able to produce a good result. It is well worth spending a large amount of time on digitalis, because, as I said at the beginning, this is one of the very few which I would put with morphia and some others as drugs about which it is impossible for you to know too much.

—*Guy's Hospital Gazette.*

Madras General Hospital.

REORGANISATION SCHEME.

Government Order.

The Government of Madras have passed orders on the scheme of re-organisation of the Madras General Hospital. The number of unpaid House Surgeons and House Physicians employed in the hospital is to be increased. Arrangements are to be made for six medical and six surgical units in the hospital. Three of the Chief Physicians and three of the Chief Surgeons are to be honorary medical officers. The Government sanction the appointment of an Almoner in the hospital as an experimental measure. They have directed that other city hospitals should also be conducted on similar lines in the out-patient departments.

The following is the text of the Government Order:—

The Government have had under consideration the question of re-organising the work in the Government General Hospital, Madras. The decisions arrived at are embodied in the following orders.

Out-Patient Department.

The Skin Department should be opened at 7 a.m.

The number of unpaid House Surgeons and House Physicians employed in the hospital should be increased. A sufficient number of these officers should be posted in the out-patient departments with a view to expedite work in those departments and to attend to daily dressing work which is at present entrusted to nuring orderlies and junior medical students. If medical graduates are not available for such appointments, L. M. Ps. who have freshly passed out of medical schools may be employed. These House Surgeons and House Physicians need not necessarily be provided with Government quarters In case unpaid men are not available the question of employing paid men as Sub-Assistant Surgeons in the place of orderlies may be considered.

The Surgeon-General is requested to make such reduction in the strength of nursing orderlies as may be possible after the above arrangements are put into force.

The Chief Surgeon or Physician of the Surgical and medical units, who are fulltime paid officers, should attend the out-patient department on the days on which in-patients are admitted to their respective units.

Medical and Surgical Units.

(1) In modification of the existing arrangements there should be six medical and six surgical units in the hospital, each consisting of:

(*a*) The Chief Physician or the Chief Surgeon,

(*b*) One paid Assistant Physician or Surgeon,

(*c*) One Honorary Assistant Physician or Surgeon,

(*d*) A Senior House Physician or House Surgeon and

(*e*) Three junior House Physicians or House Surgeons who intend to appear for the M.D., M.R.C.P., M.S. or F.R.C.S, at the end of their House appointments.

(2) Three of the Chief Physicians and three of the Chief Surgeons should be Honorary Medical Officers.

(3) The existing number of beds in the hospital in charge of Physicians and Surgeons should be redistributed with reference to the six units mentioned in item (1) above. The Chief Physician or Chief Surgeon will be in full charge of all the beds in his unit, but these will be divided between the paid and Honorary Assistant Medical Officers, both of whom should be given equal facilities with regard to work. Paid and Honorary Assistant Surgeons should be given opportunities for performing operation work.

(4) If the paid assistants are found unsuitable for the work within a period of six months after they are posted to the units, they should be posted elsewhere. If they are found suitable they should be thoroughly trained so that they may become fit to take charge of hospitals in the mofussil.

(5) The Superintendent of the Hospital should see that the orders passed in items (1) to (4) above are carried out.

Reservation of Wards.

(1) No special ward shall be reserved for Anglo-Indians.

(2) There shall be no distinction in accommodation, medical attendance, nursing and supply of bed linen between a European, Anglo-Indian or Indian patient in the general non-paying wards in the hospital. The difference in the scale of diets may continue.

(3) The Surgeon-General is requested to consider the question of opening C class paying wards wherein patients shall be admitted on the basis of the rate of income without any distinction of caste, colour or race and the rates of hospital stoppages may be cheaper when compared with the rates now charged in "A and B" class special wards.

Barnard Institute of Radiology.

The Barnard Institute of Radiology should be under the control and supervision of the Superintendent of the Government General Hospital, Madras, and the Director of the Institute should be officially subordinate to the Superintendent.

Appointment of an Almoner.

The Government sanction the appointment of an Almoner in the Government General Hospital, Madras, as an experimental measure. The office should be of the grade of a sub-assistant surgeon. For the purpose of this appointment no new post will be created for the present, but one post from the leave reserve should be utilised. The Surgeon-General is requested to select a suitable and reliable officer for this appointment. The Almoner should be present in the out-patient department during the morning hours and should watch the progress of work and take the necessary precautionary steps to prevent corrupt practices. In the afternoon he should work in the in-patient departments and gather infor-

mation about the capacity of the patients to pay hospital stoppages and also about their status in life and resources. He should watch the work of nursing orderlies, check the work of gatekeepers and prevent corrupt practices. He should submit to the Superintendent of the Hospital a daily diary showing the work done by him. If during the course of his duties he notices grave irregularities he should report the facts confidentially to the Superintendent direct.

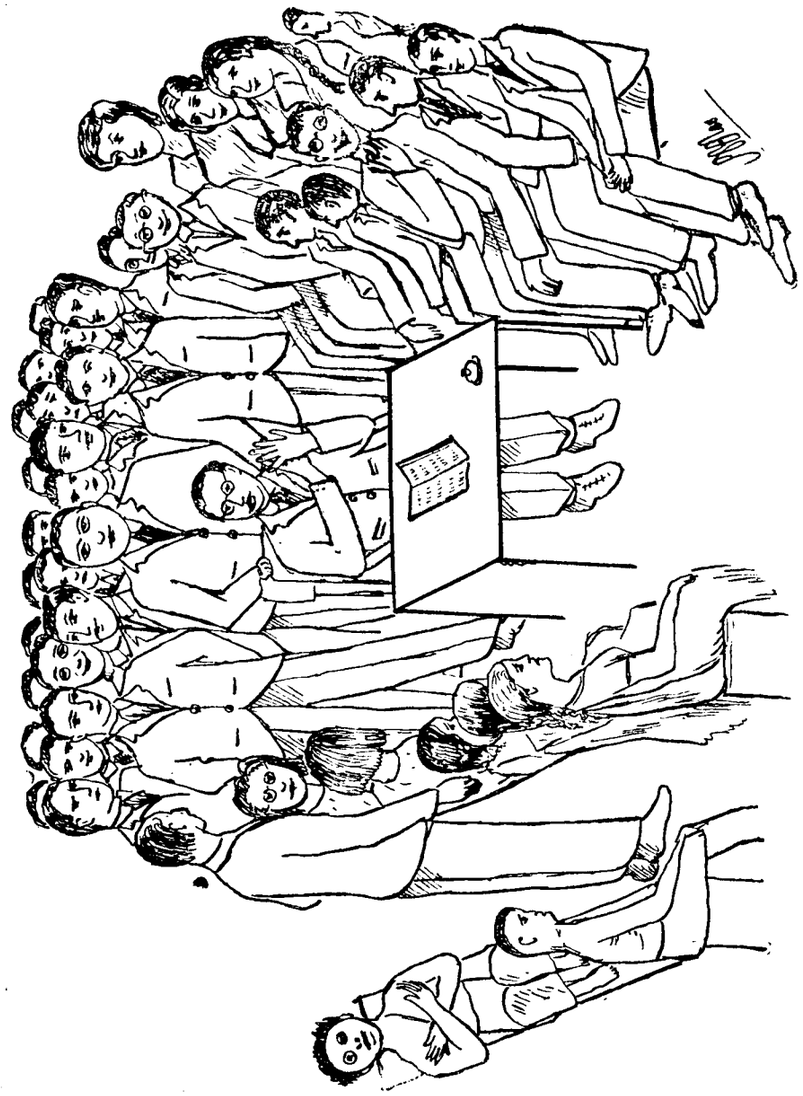
The Surgeon-General is requested to submit a report at the end of six months on the work of this officer together with his recommendation as to whether the post should be continued, and if so whether a regular post should be created.

Out-Patient Work in Other Hospitals

(1) The Surgeon-General is requested to ascertain whether the hours and conditions of work in the out-patient departments in other hospitals in the city are similar to those in the Government General Hospital, Madras. If not, he is requested to issue instructions to the Superintendents of the Hospitals to follow the procedure now approved in the case of the General Hospital.

(2) The number of honorary medical officers in the Government Royapettah Hospital, Madras, may be increased in order to expedite work in the out-patient department of that hospital.

Orders will issue separately regarding (a) the re-organisation of the nursing staff, (b) the reconstitution of the advisory committee in the Government General Hospital, Madras, and (c) the appointment of a Lay Officer in the Government General Hospital, Madras, to relieve the Superintendent of non-technical work as far as possible.



MANIA FOR GIVING CLINICS—OUT-PATIENT

Work of the Hospital Almoner.

The annual meeting of the Institute of Hospital Almoners on February 21st was addressed by Sir Walter Langdon Brown, Regius Professor of Physic in the University of Cambridge.

He began by referring to the early history of the almoner at his own hospital, St. Bartholomew's, whose records showed that there were formerly almoners charged with the duty of examining all persons brought to the hospital and admitting them at discretion. In course of time those officials became the house committee, but the administrators of the hospital were still known collectively as "the treasurer and almoners." As the nineteenth century went on, the machinery for dealing with patients attending the large hospitals was seen to be entirely inadequate, especially on the medical side. He had talked with those who remembered that in their own hospital days there was a functionary known as the apothecary, who sorted out the patients in the casualty department by asking all those afflicted with whatever the prevailing symptom might be to hold up their hands, and thus the patients were divided into groups, and many of them received symptomatic treatment without further inquiry. St. Bartholomew's replaced the "apothecary" by casualty physicians and surgeons, who had been through house appointments and were either waiting for staff vacancies or were already junior members of the staff. That was a great advance, but how speedily it proved inadequate could be gathered from the *Account of the Casualty Department*, written by Robert Bridges, afterwards Poet Laureate, who, as a practising doctor, was the first to make a real protest against the inadequacy of hospital methods in this respect. The speaker said that when he himself entered, Bart's, seven years after Bridges had written, he was, even as a novice, appalled at the magnitude of the task and the difficulties to be overcome. Owing to the efforts of Sir Charles Loch, the first lady almoner, Miss May Stewart, was appointed in 1895: she worked at the Royal Free Hospital, and he fancied there was an inquiry officer at St. Bartholomew's when he joined the staff in 1894; at any rate, there was such an officer shortly afterwards, but all he had to do was to try to prevent hospital abuse. At that time, although the staff realized that their efforts were often rendered nugatory by the absence of help on the social side, there was no constructive policy. The idea of a new type of almoner, trained in methods of sympathetic investigation and scientific relief, had scarcely arisen. When he joined the Metropolitan Hospital in 1900 the senior physician was Dr. Alexander Haig, who pressed strongly for the service of a trained worker to follow up patients from hospital wards into their own homes.

To-day follow-up machinery of some sort was a recognized part of the system in every well-equipped hospital, but it was clear that any follow-up scheme must be at least as largely social as medical in its activities. He had repeatedly said that quite as many people were ill because they were unhappy as were unhappy be-

cause they were ill, and the cause of the trouble could, in a very large proportion of cases, be traced to home conditions. Unless such home conditions were known and taken into account through a system of trained almoners — necessitating, indeed, a considerable expansion of the present system—he did not see how adequate, intelligent, and successful medical treatment was possible. Sir Walter Langdon Brown added that he was glad to learn from the annual report of the Institute that there was a rapidly increasing demand for certificated almoners. The almoner was called for in municipal no less than in voluntary hospitals, and in the general hospitals of the London County Council a scheme which included the appointment of almoners in all of them had been adopted. It was interesting to note the increased demand for social workers in hospitals and clinics devoted to the treatment of mental illness. All social work in mental hospitals ought to be based on experience of such work in general hospitals. In anticipation of his address he had received some criticisms of the almoner system. One difficulty concerned the amount of circumlocution often entailed by correspondence which had to go the round of the doctor, the almoner, some outside organization, and the hospital secretariat. Another correspondent criticized the almoner's too stereotyped approach, and suggested that it was not her duty to grind sixpences and shillings out of working-class patients without ascertaining the details of the family budget, even though the patient might himself be earning well. It had also been asked whether the almoner could do anything to remedy the long waiting in the out-patient department an old and most intractable problem. But it was encouraging to realize that although the modern type of almoner originated only forty years ago, what had been done in that time had enormously helped to alleviate the suffering of those who had to seek the services of a hospital, and had also worked out to the great advantage of their families.

Sir Walter Langdon Brown was thanked for his address on the motion of Dr. H. K. Goadby, seconded by the chairman of the meeting, Dr. A B. Howitt, M.P. The report presented by the Institute included a list of just over 200 certificated almoners actually in posts. Several of these are in Australia, where the work of the Victorian Institute of Hospital Almoners is closely linked with the progress of almoners' work on this side of the world. Six new posts were reported in Melbourne during 1934. Until recently the head almoner at the Melbourne Hospital was responsible for the planning and arrangement of the whole of the almoner students' training, but now the Melbourne Board of Social Studies has appointed a directress of training for this purpose. A temporary exchange of almoners between Australia and this country has come into being, and, it is hoped, will be renewed.

Passing reference may be made here to the issue of a rewritten and enlarged edition of a little book. *The Hospitol Almoner: A Brief Study of Hospital Social Service in Great Britain*, prepared by a committee of the Hospital Almoners' Association. The first edition, privately printed some two years ago, was noticed in an annotation in these columns on November 19th, 1932.

—*B. M. J., March 31, 1934.*

Training the Hospital Almoner.

Sir Farquhar Huzzard on what an old profession can teach a new.

In an address to the Institute of Hospital Almoners, of which he has lately become president, Sir Fraquhar Buzzard, Bt., dealt with some aspects of professional training in general, and gave to the members of this comparatively new profession some counsel which has an interest for a wider circle than those to whom his remarks were immediately directed. As a result of his long experience on the staffs of four London hospitals, he paid tribute to the manner in which the almoner had gradually bridged the gulf between the treatment prescribed by the hospital doctor and its practical application. These four hospitals, by the way, included the Royal Free, the first institution to establish an almoner—Miss Stewart; and St. Thomas's, where Miss Cummins, whom he described as "the Florence Nightingale, if not the Mussolini, of the movement," had served.

Aspects of the Almoner's Work.

He went on to refer to the results of a questionary sent out by the council of the Institute to hospitals all over the country, which showed that out of a sum of £9,185 spent on surgical appliances, 47·2 per cent had been raised from the patients, 8·9 per cent from hospital and almoner's funds, and the remainder from other agencies. Thus a large number of appliances (9,334) were provided at an extremely low cost to hospital funds, and the co-ordinating influence of the almoner helped the other agencies to carry out their functions in the best way. Of £12,734 spent on convalescent treatment for 5,509 cases, the patients provided 28 per cent of the cost, the hospitals 18·6 per cent, and other agencies the remainder. Here again the almoner was able to arrange that only a small part of the cost fell on the hospital. The questionary had also yielded much interesting information with regard to the following up of patients after discharge from hospital. These patients fell into four categories: those in need of convalescence appliances, or extra nourishment and help at home for a limited period; those who required prolonged supervision or assistance in procuring diet and drugs to enable them to lead a more or less normal existence; the incurables, who required certain accessories and comforts; and, finally, cases the further history of which was specially desired for the purpose of research or statistics. Sir Farquhar Buzzard believed that the preventive aspect of the almoner's work would one day assume a more important role. It was through the medium of the almoner as interpreter and expositor that a knowledge of the advances made in practical medicine would reach the poorer classes of the population.

Preparation for a Profession.

Turning to the almoner's training, the speaker thought that something was to be learned from the history of the medical profession. The older profession had been taught by experience some lessons which were worthy of attention by a younger profession still experimenting and feeling its way.

One advantage which the profession of almoner enjoyed over the medical profession was that its ranks were recruited by a process of selection and probation, and up to the present only candidates had been accepted who had completed a general education, so that the snare of early specialization had been avoided. It could not be too strongly urged that even after school life was over a girl needed a period of at least a year in which to widen her horizon before entering upon special preparation for the almoner's certificate. In order to become an efficient social servant some knowledge of all social strata was essential, and without it a woman's sense of perspective might be seriously and permanently warped. The interval between leaving school and entering upon professional training might be usefully employed in travel, university graduation, or the study of any subject having no immediate connection with social service. All professions would benefit if some such rule were in force, but the small profession of hospital almoners was almost the only one at present able to make it a universal requirement.

The medical student, less than a century ago, began his preparation by becoming an apprentice for a year or two to a doctor, afterwards joining a medical school and turning to the more academic side of his training. But with the advance of medical knowledge, the extraordinary development of the sciences ancillary to medicine, and the necessity for acquiring some knowledge of chemistry, physics, biology, anatomy, and physiology, the student's course was completely changed, and now he no longer came into contact with sick persons until that background of learning had been attained. A few regretted the old system, but nothing was less likely than its resuscitation. On the other hand, the pendulum of reform had perhaps swung too far in the opposite direction. The student might well see more of sick persons at an earlier stage of his curriculum, if only to enable him to compare health with ill-health and to appreciate better the significance of his studies. It could also be urged with justice that too much of the student's time was spent in scientific fields remote from those in which he would have to earn his living. The general desire was now being felt for a simplification of the curriculum in some directions, and a greater and more fluent continuity.

Dangers of an Overburdened Curriculum.

Sir Farquhar Buzzard referred to one more criticism of the present medical curriculum, which was pertinent when considering that of another profession. During the last half-century, owing to a continuous series of new discoveries large additions had been made to medical knowledge, and the student's burden had become heavier than he could bear. He had time perhaps to memorize, but certainly not to digest, the material put before him. If the profession he was now addressing were tempted to add to the training little by little there would come a time when that profession also would have to face an overburdened curriculum, and would be under compulsion to do something about it. He urged that the subjects which were essential for every candidate should be kept clearly in mind, together with the subjects which were merely desirable, or were necessary only to a few. The curriculum should embrace the essentials, and post-graduate study deal with the remainder. Moreover, not every moment of the curriculum should be filled even with essentials; time must

be allowed for thought, for mental digestion, and for recreation.

An essential, theoretical and academic background should be painted, and before it had time to dry the practical details of the foreground should be gradually filled in. In medical training the background had become so separated from the foreground that they might almost be thought to be separate pictures. The hard lines of demarcation, emphasized by too numerous examinations, had been allowed to split the picture into artificial compartments. The present task was to wash them out and the process of restoration was none too easy.

What should the Almoner Know of Medicine?

Some had asked what an almoner ought to know of anatomy and physiology, medicine and surgery. Sir Farquhar Buzzard confessed himself doubtful as to the value of the time spent even by nurses in acquiring a smattering of anatomy and physiology, so it was not surprising if he depreciated the idea of almoners wasting much of their energies on a similar quest. Of course, it was to be hoped that in a day not far distant all girls and boys would be taught at school the elements of biology in such a way as to make them familiar with the general structure and functions of the human body. In the meantime, he doubted the wisdom of doing more than encourage students for the almoner's profession to gather what they could from suitable books. Still stronger was the argument against any attempt to teach them even the elements of medicine and surgery. What they would need in carrying out medical social service was the ability to understand and interpret the strange language used by doctors, and more important still, an intimate and sympathetic conception of the principles, ideals, and ethics underlying the practice of medicine. For those who wished to specialize in the work of mental hospitals, medical psychology must be regarded as a post-graduate study of importance, requiring perhaps special courses of instruction, and opportunities of gaining experience. The student who had taken a course of social psychology and philosophy was well prepared to assimilate the main features of medical psychology.

In conclusion, he said that the almoner's profession would be faced, as the medical profession had been, with the problem of specialization. Social services in the field of mental hygiene and in that of industrial psychology needed special qualifications, but these should be a superstructure based on an all-round knowledge and experience of social service as a whole. The best specialists in any walk of life were those whose grasp of subjects outside their specialities had reached and maintained a high standard. It was encouraging to learn that the demand for almoners was steadily increasing. It was a career undoubtedly only suitable for women who were well educated, physically and mentally sound, and had a genuine "urge" for social service.

—*B. M. J., March 31, 1934.*

Reports of Societies.

BRONCHOSCOPY AND ŒSOPHAGOSCOPY.

At a meeting of the Aberdeen Medico-Chirurgical Society held on March 1st 1934, with Mr. ALEX. MITCHELL, President, in the chair, Dr. H. ROSS SOUPER read a paper on "Bronchoscopy and Œsophagoscopy in Diagnosis and Treatment".

After a brief outline of the development of peroral endoscopy within the past thirty years, and a description of the types of instruments in common use, Dr. Souper detailed the indications for bronchoscopy, more particularly in diagnosis. He pointed out that while the part played by bronchoscopy in the search for, and removal of, foreign bodies had been realized for years, it was not by any means so widely recognized that bronchoscopy was a diagnostic method of the greatest importance in diseases of the lung, and quoted the dictum of Chevalier Jackson, that "in a general way it should be stated that diagnostic *bronchoscopy is indicated whenever there is an unsettled diagnostic question.*" He referred to the uses of bronchoscopy in bronchiectasis, lung abscess, atelectasis, bronchial obstruction, asthma, tumours of lung, and post-operative complications. He then analysed his own figures of 188 bronchoscopic and œsophageal examinations, a total which excluded all bronchoscopies performed merely for the local injection of lipiodol and all direct laryngoscopies, with one exception, a somewhat unusual case of foreign body. The total of 188 was composed of 166 œsophagoscopies and 22 bronchoscopies, the latter figure being in Dr. Souper's opinion lamentably small. The two most numerous groups in the bronchoscopy cases were examinations for foreign body in the bronchial tree and for lung abscess. The importance of early diagnosis of foreign body was emphasized, and cases were described where, owing to the lack of appreciation of the presence of foreign body, it had been overlooked for months or even years. Four cases of tumour of the lung had been encountered, and two were described in detail. In both cases the diagnosis, while suspected on clinical grounds, had been absolutely confirmed by bronchoscopy.

Investigation of Œsophageal Symptoms.

In the investigation of cases presenting œsophageal symptoms, the lecturer considered œsophagoscopy an essential method of examination. He pointed out that it had the advantage over X-ray examination in that it permitted direct inspection of the diseased viscus, and that the appearances obtained by X-ray examination of the barium-filled œsophagus might occasionally be misleading. He condemned whole-heartedly old-fashioned methods of investigating cases of œsophageal disorder by the blind passage of the bougie and by attempting to remove a foreign body by probangs and other obsolete instruments. The cases of œsophagoscopies, numbering 160 were made up as follows: (*a*) foreign body, (*b*) cardiospasm, (*c*) cricopharyngeal spasm, (*d*) dysphagia and anæmia, (*e*) simple stricture, (*f*) peptic ulceration, (*g*) œsophagitis, (*h*) diverticula, (*i*) abscess, (*k*) functional dysphagia, (*l*) negative, (*m*) malignant disease. These groups were then discussed in some detail and some unusual foreign body cases described, more particularly two cases in which examination had been performed by bougie or other instrument before the patient was admitted to hospital, with an eventual fatal result in both. In one case an ulceration of the œsophageal wall was found three inches down the œsophagus proper, through which it was assumed the foreign body had passed. The patient in a few days died of uncontrollable hæmatemesis, and at necropsy a perforation of the œsophageal wall was found entering a small abscess on the left side, which had ulcerated into the left subclavian artery.

In the cardiospasm group there were twelve females and seven males, the youngest being 17 and the oldest 65. All had been submitted to œsophagoscopy with a view to confirming the diagnosis, and nearly all cases had been treated with success by the use of the mercury bougie. Only three patients in whom the œsophagus was so dilated that the bougie could not hit off the cardiac opening *had been submitted to Walton's operation*, one of whom had died of streptococcal gastritis. The lecturer delivered a warning *against the too ready acceptance of a radiographic diagnosis of cardiospasm in an elderly patient, and showed slides of two cases where appearances suggesting cardiospasm were present which in reality masked malignant disease of the cardiac end of the stomach.*

Seventeen cases, all female, of dysphagia and anæmia, or the *Plummer-Vinson syndrome*, had been investigated, and in seven cricopharyngeal spasm, and in six a cricopharyngeal web, had been found. These cases also improved by the passage of the mercury bougie and the administration of iron in suitably large doses. In the group of active ulceration two cases were those of ulceration following pregnancy, which, on subsequent examination, were found to have healed without stricture formation. Two slides of diverticula were shown, one at the upper end and one in the thoracic œsophagus.

—*B. M. J., March 31, 1934.*

The Primary F. R. C. S.

BY "AIRS"

The primary examination for the fellowship of the Royal College of Surgeons of England was held at Bombay in January. The written examinations were held at the Convocation Hall of the University of Bombay; and the oral examination at the Department of Anatomy, Grant Medical College. This was the third primary fellowship examination held in India. A large contingent of twenty-four were to represent Madras. Of these, twenty were men and four ladies. Nine were graduates. Of the under-graduates four were optimists from the second year, who had entered provisionally. Twenty-two actually appeared. One, after months of real hard toil gave up the struggle and got married, while the other stayed in the General Hospital with tonsilitis and quinsy.

On the two previous occasions we claimed the majority of the passes, but this time, for some mysterious reason, our name was completely effaced from the board. This was somewhat unexpected as the candidates who appeared this year were considered to be a little better than their predecessors. They were coached to the minute, especially in Anatomy. When our most ardent supporter called it 'The Tragedy of Bombay,' he voiced the general sentiments of our well-wishers. Of the sixty-seven candidates who appeared, eleven were successful. Seven of these were from the University of Bombay.

The Examiner in Anatomy was Cecil G. P. Wakeley, better known to us as the author of the present edition of 'Rose and Careless' Surgery,' while the assessor was Lt.-Col. F. J. Anderson, I.M.S., an old friend of ours. The Physiology Examiner was Professor A. St. George Huggett and the assessor was Lt.-Col. Bhatia, I.M.S.

The Anatomy Department at the Grant Medical College is much smaller than ours and not so well-equipped. Their Museum however has some very good specimens. Further, the dissections prepared by the members of this department, for use in the oral examination, were perfect. Their Department of Physiology is however a definite improvement on ours. The Bio-chemistry, Histology and Experimental Physiology laboratories are in the same block but on different floors. The Histology laboratory is on the uppermost floor. Its roof and walls are mainly composed of glass, perfect light being thus provided. Descriptive diagrams of microscopic sections are mounted on suitable stands so that a complete revision of Histology may be done in an hour.

At the conclusion of the examination a meeting was held in the Physiology lecture hall of the Grant Medical College. Professors Wakeley and Huggett addressed the gathering. Professor Wakeley declared that a thorough knowledge of Anatomy was essential to a medical man. He noticed that most candidates who appear for an examination in Surgery are unable to answer any questions in pure Anatomy. Professor Huggett affirmed that Physiology, rather than Anatomy was the key to the gate of success. Professor Huggett also

suggested that patients should be used for experimental purposes. (This is not in accordance with our nobler feelings, however). They advised us to 'Stick to fundamentals'—we, who had 'stuck' manfully to fundamentals and who were asked to resurrect minute details. There are, however, fundamentals and fundamentals. The only lucky ones were—she of the marriage, and he of the tonsilitis and quinsy who regain half the entrance fee and retain an unblemished reputation.

——:o:——

What's Your Fad?

BY "ZAC"

Some are good and some are bad,
But every man has got his fad;
And every girl though not so bad,
She too has her funny fad!

You've seen the girl who winks at you
And when you wink back, changes hue,
She's no good, for she won t stay
When you try to lead her away!

There's the chap who has got a craze,
His chasing girls is a perfect case:
He sees some pink in skirt or smear
And nought on earth can keep him clear!

Then there's that type on every side,
When I see him, I try to hide—
"How d'you do! And how's your girl?"
That's how he takes you in a whirl—

He'd grin at me and sit with me
And have a cup of jolly tea,
But, when it's time to pay the fare
He'd show his blooming head nowhere!

He's fine the chap who drinks alone
He doesn't chat, but pays his own!
I like to eat with Jack and Jill,
But I can't always foot the bill!

You've seen the guy who takes to drink,
He's almost always on the brink!
And the other one who would say boo
When, like me, he takes a drop or two!

There's one who drinks all sorts of ale,
His belly would be full cocktail!
And one who shouldn't taste a gin
Who'd jolly well go into a spin!

There's the fellow who's fond of cards,
That's just one of those many fads;
And then that bloke who takes a bet,
It's ten to one he'd never get!

And there are many another fad
Though they are not all so bad:
You have one and he has one;
I tell you, these make all the fun:

Now tell me one thing, this you should
What's your fad? if you're so good—
What's mine? Well, now don't hiss
If you don't mind, I like to—!

Welcome.

(To the new members of the Staff and the new Students.)

Let me sing in *verse libre*
And so our friendly feelings aver
Thus to voice our warm welcome
To all the students who're newly come;
And to the staff who met our stare
Here's of our love a prodigious share.
If I may start with the 'Medicine Chair',
A teacher like him is extremely rare:
" In the vast majority of cases " he would say,
And that umpteen times in his own delightful way.
To our worst mistakes he's so very fair,
In so short a time he has become quite a " dear ".
Now if you look behind the 'Therapeutic Chair'—
Never mind about the bit of a glare—
You think he should be more gay?
No! " solemn and silent " that is his way.
His bed-side clinics you must attend,
It will be time most profitably spent.
Tramp up now to the surgical side
To meet the colonel who steps rather wide;
He has a light and a glorious heart,
No wonder R.M.S. wept when he had to depart.
His,—is always the students' cause
I will have him, if I should have a boss!
And now if you stand at the College gate,
After ten it will be rather too late;
You will meet the pre-reg boys
And the pre-reg girls with muted voice—
The aspiring scions of medical science!
We admire their pluck and prevailing sense;
Despite dark schemes to our college they've come
Here's to their friendship, our love and warm welcome.

T. K.

The Modern College Girl.

All the enchanting words ever mentioned by tongue or pen of highly accomplished women in the past, pale into insignificance before the real wonder of the Modern College Girl, when after two or four years' course of study, she leaves her College taking the wide winding road that leads her out into the world.

The different subjects she has had the good fortune to learn help her to adopt a new attitude towards life. So varied and interesting are they, that literature and foreign language have given her clear expression and helped her to gain an insight into life and literature of other nations which will one day prove to be one of the surest foundations of world peace, " for every language learnt—Man gains a soul". Then there is the enthralling study of history delving into the past of one's country, and the races of the world. The habits and statesmanship of buried Kings and Emperors and traditional views about various forms of life. Philosophy has taught her serenity and has trained her mind to determine and judge for herself with truth as her primary object in life for " The Love of Truth is beginning and the end of wisdom".

Scientific reseach has promoted her powers of critical observation, reasoning and experiment has helped her to solve to some extent the intricate problems of life—to distinguish facts from fables.

Botany, Economics, Mathematics and a host of other fascinating subjects, compose in our Colleges a curriculum to which exponents of this advanced age can well be proud of. Thus with interest aroused in the nobler views of life, with truth, learning, observation, reason, expression, she goes forward to serve the cause of humanity undaunted and unafraid.

For a moment her mind travels back to her old College—its vast and airy spaciousness, the long dim corridors of great Masters of Learing on its walls, works of men of culture and refinement, its giant libraries, comfortable desks, well-ventilated rooms, the windy green lawns, colourful flowers, the shady trees, their spreading branches sheltering multitudes of "Maids in meditation fancy free"; the low compound walls, the lovesome paths, the safe round corners of the Building that sought conspiracy among the discontented. Her thoughts fly back on her first day of admission into the College—when the " freshers " were summoned to the " Assembly Hall ", to stand before a thous and scrutinising eyes, the awful silence that reigned the place, interrupted occasionally by the sudden burst of laughter from the boisterous seniors. She could well remember that the great grandfather clock strike ten, a whisper going round the hall—"Look, my Lord, it comes"—her sweet College mates that made her life enjoyable. All now come before her and the beautiful vision is lost in real grief.

There is another side of the Modern College Girl's life—sport forms so great a part of the programme that no girl is denied the chance to develop a sane mind in a sound body. Swimming, tennis, badminton, hockey are important items in the sports list and this goes a long way in the

development, keenness of eye and clarity of thought. Drama, debating societies have long since directed histrionic talent and immense joy and abounding pleasure is to be found in the newly appointed music classes for those who are included. Is it such a wonder with such noble foundation, that the Modern College Girl could take her place in the world as a successful doctor, professor, lawyer, statesman or in business and claim equal right with men?

The modern woman has achieved a great deal already and that is proved by the changes in the law of the land. Necessity has with charming simplicity made women the equal of men, and the idea of independence, freedom is quickly gaining ground in every country.

The life of the harem, the sheltered existence of a pampered queen in the 'Sultan's palace has lost its charm for a modern girl, they have made independence a religion almost and love to depend on themselves for everything.

There is no counting for human prejudices that the modern girl claims her right with the opposite sex, save that men have monopolised all the work of the world, honours, inheritance and privileges of their fathers and grandfathers have done before them. The real unhappy educated girl is not the girl with a profession but the girl without it.

Idleness and with culture, education is a tragedy that makes life a negation of all feelings a numbed journey through a spiritual world.

J. A.

The Park Hostel.

Farewell to the dear old Wallajah Bagh and all hail to the "Land of Promise" which we have sighted after many weary years of patient waiting!

I wonder why it is called the "Park Hostel." No doubt, the name sounds stylish and grand. In fact, when we heard the name first, we pictured, of course, with our usual stretch of extensive imagination, a huge fine hostel surrounded all round by a lovely park. When we paid our first visit to the place—it was long before our actual shifting—our first look out was for the park. Our curiosity reached its height when we saw that one of the opposite bungalows was called Park View. Ever since, we are trying to discover the 'invisible park' I wonder if Columbus had half the difficulty in discovering America! As far as one's vision extends, there is no park anywhere in the neighbourhood and the so-called hostel looks such an antique building that one is often reminded of the 'castles with mysterious outlooks' which Scott is so fond of describing. The uncouth, massive building with two long steeples at either end—the long, dark narrow road extending from the main road to the building and the extensive compound with a couple of trees in front (rendezvous to the cobblers) is a marked contrast to what a hostel in a park ought to look like.

On entering the building, one encounters the common room, which we are all mighty proud of. In Wallajah Bagh, the visitors' room was a stuffy garage with a few old rickety chairs, and the presence of legions of mosquitoes. Now, the chairs are all varnished anew and the common hall is a large one with two powerful lights and an electic fan. So, more than us, the visitors will welcome the change. But, there is a huge screen inside which makes many a person inquisitive as to what lies on the other side of it. The tragic part of it is that there is nothing tempting except four tiny single rooms with windows opening to the outside (only one in each room) and doors into the common hall, the air and ventilation from which is effectively cut off by the screen!

In the second flat, there are eight single rooms, four in front and four at the back, with a narrow corridor separating the two suites. The rooms remind one of cabins in ships and the funny part of it is how each room controls the air and ventilation of the opposite room. If the doors of the back row of rooms are closed, the front row rooms do not get breeze! If the windows of the front row are closed, well, the back row gets no light. Probably, the idea underlying the arrangement is to encourage sympathetic friendship!!

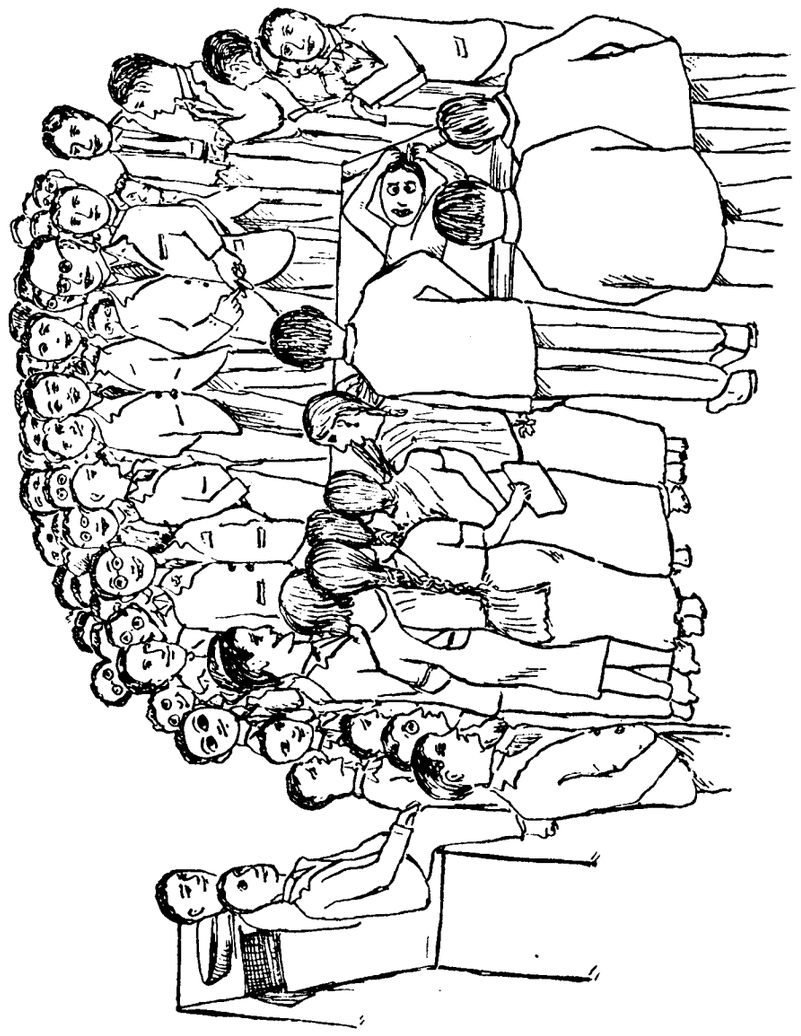
A flight of about eighty steps leads you on to the lovely terrace—the pride of the place. The view from the top is glorious. You feel as if you are really 'the monarch of all you survey'. But, the very idea of climbing up such a height makes a girl desperate. So the terrace is the resort of a few girls who ebb with superfluous enthusiasm and more often a few rare birds who crave for loneliness at any cost.

The whole enchantment of the place lies in the grand terrace, the lovely balconies supplied to the right wing rooms, the long corridors and the vast amount of open space in front of the building. Besides these, practically every evening we have fine, healthy amusement for at least a couple of hours, often much longer, in the form of radio from Mr. Michael Thambooswamy's house. Probably the occupants of the place are quite unaware of the strength of the audience that their music attracts but, anyway, our thanks to them. Very few can resist the temptation of coming out of their shells at least for a few minutes and many an evening, you can see groups of girls walking up and down the narrow road, all intently drinking in the fine melody.

The disadvantages of the place are a few but often enough to try one's patience. Walking up to catch a tram or a bus is all right early in the morning if the weather is fine. But to walk back after a tedious day's work at College proves very tiring. The large number of steps that one has to climb up to reach the rooms in the third flat (climbing up and down the stairs in the College and Hospital was bad enough) wearies the sturdiest person. The greatest of all the disadvantages is that the place on the whole is more or less a 'whispering gallery'. In Wallajah Bagh, where we had separate blocks, the noise used to be localized. But now, the slightest noise in the ground floor is magnified to such an extent that it is easily conducted as far as the Olympian heights. During study hours, such a generalized disturbance will set any one's ganglia into vibration.

But, in spite of all these, we must confess that we like the change. The hostel for the men students is progressing fast next door to us. No doubt, it is going to be a model hostel for medical students, as it is expressly built for that purpose. I dare say, in course of time, several improvements will be made for our building also so that the future generations of students will have the good luck to enjoy their lives in really ideal medical hostels with all the hygienic facilities about which we are taught so much. May we hope that such a day is not far off?

"THE CONTENTED."



MANIA FOR GIVING CLINICS—IN-PATIENT

THE 17th ANNUAL REPORT

OF THE

Madras Medical College Association

for the year 1937-38.

Worthy President and Friends,

It gives me very great pleasure to present the annual report of the College Association for the year 1937-38.

With regard to the *election of the office-bearers* of the Association a pleasant feature this year was that there was no real contest at all. The following were the office-bearers :

The Executive Committee.

President.—Lt.-Col. C. M. Plumptre, I.M.S.

Vice-Presidents.—Dr. M. R. Guruswami Mudaliar, B.A., M.D., and Dr. A. Lakshmanswami Mudaliar B.A., M.D., F.C.O.G.

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

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

Class Representatives.

Final Year—Mr. M. Shamshudhin.

Fourth Year.—Mr. G. Ragunandan.

Third Year.—Mr. R. Ananthanarayanan.

Second Year.—Mr. P. Mathias.

First Year.—Mr. T. K Jayaram.

Pre-Registration.—Mr. D. Jaganth.

Military.—Mr. D. J. R. Snow.

Lady Student.—Miss G. Buultgens.

General Secretary.—Mr. K. N. Alva.

The Magazine Committee.

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

Editor.—Dr. N. S. Narasimhan, F.R.C.S.

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

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

Student-Editors.—Mr. T. K. Narayan, and Miss J. Ashirvadam.

Assistant Secretary.—P. V. Sundaram.

Secretary & Publisher.—Mr. K. N. Alva.

Meetings.—During the year under report, as many as five *general body meetings* were called for. All the meetings were well attended. Important subjects concerning the affairs of the association and the welfare of members were discussed. The detailed accounts appear in the minutes book as well as the College Magazine. Of the various resolutions passed at the general body meetings held during the year three are worth mentioning

1. The criticism of the honorary scheme of the present Government.

2. The necessity for the reduction of the cost of medical education.

3. The demand for the construction of a suitable hostel at an early date.

Three *Executive Committee meetings* were held this year.

The Magazine Committee met twice during the course of the year under review.

There were two *special meetings* under the auspices of the Association, one in order to congratulate Dr. A. L. Mudaliar on his appointment as Principal and to bid farewell to Dr. K. S. Visvanathan who proceeded to America on Rocke-feller Scholarship, the other when Major-General Bradfield, Director-General, Indian Medical Service, addressed.

The function.—The Graduates' Reception, which is in fact the only function of our college worth mentioning, was celebrated on 10th August 1937 and was an unparalleled success considered from every aspect.

Finances.—The finances are to be considered under two headings—the Association funds and those of the Magazine. The financial position of the Association is not quite satisfactory. The amount collected during the year at the rate of a rupee per head is hardly sufficient for the celebration of the Graduates' Reception in an appropriate manner. Even as regards the Magazine funds, though there is a recurring deposit of about 3,000 rupees, the fact remains that since a few years it has been found that the annual cellections have to be utilised almost entirely in order to maintain the high standard of the Magazine. I should consider that the lack of finances in the Association funds is a great hindrance to the progress and smooth running of the Association.

College Common Hall.—The old library which was transformed into the Common Hall two years ago did not seem to serve the purpose it was meant for. The idea of converting it into a reading room has just become an established fact. On the 2nd of March, 1938, the inauguration of the reading room was performed by Mrs. Plumtre, the wife of our beloved Principal. Enough of magazines, periodicals and daily newspapers have been provided. Mr. T. K. Narayan's help in this connection is worth mentioning. I sincerely hope that my successors will see that more improvements to the reading room are effected in the years to come.

The services of a full-time clerk were requisitioned, from the 2nd March, 1938, to do the association work, to look after the affairs of the magazine and to be in charge of the reading room.

Permanent Stage in the Examination Hall.—Though we had an extensive hall, the want of a permanent stage was keenly felt on several occasions. This year I am glad that this want has been fulfilled to some extent. To complete, some other additions, namely front screen, side screens, foot lights, etc., are required.

Restaurant.—It has been the desire of students of our College to run the College Restaurant on a co-operative basis. Owing to various reasons this could not be accomplished this year. Anyway I hope this will be taken up by my successor and brought into shape very soon.

Dining Hall.—Various improvements were effected in the dining hall during the year.

Association Rules.—Certain irregularities in the association rules were noticed and these were rectified, at a meeting of the Executive Committee held on 8th March 1938. The revised rules will be reprinted after ratification by the general body meeting.

Magazine.—As regards the Magazine, I can state that the Magazine Committee has spared no pains to maintain a high standard. We succeeded in getting the first two issues of our magazine published in time but a certain amount of delay was inevitable in the publication of the third issue.

Suggestions.—It is customary for the general secretary to make certain suggestions to be put in execution by his successors in office. Of these there are some which have already been tackled by me and yet which could not reach completion, either due to lack of time or from some unavoidable reasons as for example, exhibitions, study tours, annual dinner, College day, etc.

There have been several proposals to start a *Dramatic Club* in our college but what I feel is that an institution of this magnitude should have a *Literary Society* first, which could have, as one of its branches, the dramatic club. In that case, the dramatic club could easily get up variety entertainments during functions or benefit shows, whenever necessary, in aid of the association. It has been already resolved at one of the Executive Committee meetings (10th February, 1938) to have a Literary Society.

The Need for an Old Boys' Association for a premier institution such as ours was very keenly felt during the Centenary year and in reality an association came into existence that year. To my knowledge the activities of that association have been dormant since then. I consider it absolutely essential that it should be rejuvenated. The outgoing students year after year will do well to join the association and thus establish an everlasting connection with their Alma-mater. At present it looks as if students, once they leave the portals of the College, cease to take any interest in its affairs.

It is my pleasant duty to thank all those who helped me to bring to a successful close every task undertaken by me throughout my career in this College. I have served the members of this association in various capacities —Class Representative, Assistant Secretary, Member of the Centenary Executive Committee, Warden of the Medical College Students' Hostel for four years since its inception and now as General Secretary. I must acknowledge on my part that the members of this association have always reposed the utmost confidence in me.

My respect and thanks are due to our beloved Principal, Lt.-Col. Plumptre, Dr. Lakshmanaswamy Mudaliar, Dr. Guruswamy Mudaliar, Dr. K. N. Krishnan of the Association Executive, Dr. R. V. Rajam, Dr. N. S. Narasimhan and Dr. K. N. Pishoroti of the Magazine Committee. The student members of the Association Executive and the Magazine Committees have always worked with me in enthusiastic co-operation. My hearty thanks to them.

Shortly I shall be relinquishing my office as General Secretary of this Association. Need I say that I shall be only too glad to render every assistance to the Association whenever I am called upon to do so. I wish the Association a very bright future.

K. N. ALVA,
General Secretary, M. M. C. A.
March 14th, 1938.

Receipts and Payments Account of the Madras Medical College Association and Magazine for the year ending 28th February 1938.

RECEIPTS.	Rs.	A.	P.	Rs.	A.	P.
To Cash Balance as on 1-3-1937 :—						
" Association :—						
Association	339	13	7			
Magazine	1,965	9	5			
				2,305	7	0
Subscriptions	742	0	0			
Guest charges for graduate reception	51	0	0			
Amount transferred from Magazine as per resolution of the Magazine Committee dated 14-10-37	75	4	11			
Amount received from Restaurant Proprietor for right of running the same	24	8	0			
				892	12	11
" Magazine :—						
Subscriptions	1,538	8	0			
Advertisements	315	8	0			
Back Number Charges	0	10	0			
Bank Interest	22	12	11			
				1,877	6	11
Total ...				5,075	10	10

PAYMENTS.	Rs.	A.	P.	Rs.	A.	P.
By Association :—						
Advertisement charges	7	6	0			
Graduate Day reception	1,024	4	6			
Security Deposit of restaurant proprietor returned	200	0	0			
				1,231	10	6
" Magazine :—						
Printing and Stationery	1,548	15	1			
Cooly and Conveyance	11	8	0			
Bank Charges	1	0	0			
Establishment	175	0	0			
Postage	19	3	0			
Audit Fee	30	0	0			
Telephone Charges	1	6	0			
Newspapers and periodicals	25	0	0			
Prizes for best articles in Magazine	50	0	0			
Amount transferred to Association	75	4	11			
				1,937	5	0
" Closing Balance as per Cash Book :—						
Association	1	0	0			
Magazine	1,905	11	4	1,906	11	4
Total ...				5,075	10	10

NOTE.—The above statement of accounts is exclusive of the sum of Rs. 2,270 (Rs. 2,000 originally invested plus interest thereon Rs. 270 reinvested from the Magazine Account in Post Office Cash Certificates in November 1937 in the name of the President, Madras Medical College Association.

Examined and found correct.

K. JOHN CO.,
Registered Accountants, Auditors.
20-6-1938.

LT.-COL. C. M. PLUMPTRE,
President,
Medical College Association.

DR. K. N. KRISHNAN, B.A., M.B.B.S.,
Honorary Treasurer,
Medical College Association.

The Sports Casuarie

Retrospection or post-mortem, as medicos would have it, is none too pleasant a task. But to take stock of events, so that errors may be retrieved and good points kept up, there is nothing more serviceable than critically chronicling the past.

Cricket, the prince among games, catches our eye first. It is rather very sad that we lost the championship last year. Looking back on the eleven's performances, considering the wealth of talent on hand, one wonders why such a fall. As one who has closely watched the team in action in almost all its matches, I can, with confidence born of conviction, say the team has to blame itself for its poor and fluctuating fortunes. The team rarely played 'to a man' whatever the situation the team was in. I found the players—most of them—playing as they pleased and not as the situation demanded. Cricket, though a game of chance, asks for severe unity of action and ideas. Every player has to bear this in mind and no player, however great he may be, is too big for the team. With greater coherence, in our team, it can be very favourably compared to the strongest league sides.

I shall lead you on to 'who was who' in the team. Naturally the Captain comes first. A. V. Rajagopalan, popularly A. V., has to be sympathised with for his phenomenal badluck last season, individually as well as with the team. He is attractive to watch while in action, a most beautiful hitter, an enterprising and entertaining bat, a good field and a change bowler. Though he heads the bowling averages, he must 'vary his pace' to be more effective. His performances with the ball against Ceylon and Y.M.C.A. deserve mention.

L. M. Hogg, the Madras 'Varsity Captain, and an aspirant for this year's captaincy, is a versatile Cricketeer. An able captain, an amiable personality, a run-getting batsman, a reserve wicket keeper, a reliable field, he always rises to the occasion. His greatest weakness is the short ball bumped with two men on the leg side, which he plays tamely.

A. K. Haridoss.—The 'idol' of intercollegiate sport and the prospective sports-secretary, is a patient, pains taking and eminently sincere batsman. He is an asset to the eleven, having pulled it out of many a bad situation. Going 2 down plays a stolid innings and is a hard-working field.

Hari and Hogg's century partnership against Aligarh in the first innings and Hogg's 48 in the second innings not only vindicated the honour and pride of our College but of the University as well.

Muthukumaraswamy *alias* Balu, is a slender wisp of a cricketeer with a repertoire of strokes. He heads last year's batting averages. I have not seen him playing a faulty stroke the past two years. A dependable bat, in good form last season, it was a painful surprise when he was not included

in the 'varsity eleven. Must improve his fielding.

Number of Matches played—9.

Won	...	3
Drew	...	2
Lost	...	4

Runs per wicket by us ... 13·56
Do. against us ... 13·42

1. Medical College 148 for 3 (Muthu 64 not out); Eccentrics 138 for 9 (A. V. 3 for 25; N. S. Mony 3 for 25.)

2. Medical College 38; Presidency College, 59 for 2.

3. Medical College 142 for 8 (Arumugham 43, Haridoss 35 not out); Y. M. C. A. 70 (A. V. 6 for 10).

4. Medical College 134 (Muthu 58); Engineering College 139 for 8 (Atma Rao 4 for 34).

5. Medical College 154 (Ranga Raj 59; 2 sixes and one four, Shamba Shetty 31; 3 fours), Loyola 85 (Rama Rao 5 for 32).

6. Medical College 93 (A. V. 29; 3 fours); Triplicane Cricket Club 146 for 9 (Herbert 4 for 21).

7. Medical College 144 (Haridoss 50; Hogg 28); Pachaiyappa's College 148 for 5.

8. Medical College, 1st innings 70 (Muthu 20 not out); 2nd innings 58 for 3 and declared (Hogg 25; Haridoss 20 not out); Ceylon University College 1st innings, 49 (A. V. 5 for 21); 2nd innings 73 for 3.

9. Medical College 118 for 7 (A. V. 33; Muthu 22); Christian College 113.

Batting Averages.

Names.	Innings	Times not out	Highest score.	Total.	Average.
Muthu ...	8	2	64*	193	32·17
Haridoss ...	8	1	50	143	20·43

Bowling Averages.

	O.	M.	R.	W.	A.
A. V. Rajagopal.	86·3	28	144	18	8·00
Herbert ...	15·0	1	42	5	8·40
Arumugam ...	5·0	1	10	1	10·00
N. S. Mony ...	42·0	6	153	14	10·93
Rama Rao ...	95·3	25	212	16	13·25
Atma Rao ...	53·0	13	130	9	14·44

In Hockey the Medicos are not the force they were. A depleted side it is, yet with their earnestness and love of practice, they will do great things. They just managed to win the inter-collegiate championship.

I am sorry, I have to say some harsh things of the foot-ball eleven. There was an unpardonable slackness and carelessness in all its doings. No regular practice and no regularity in turning up for matches. It was very deplorable that, just because a match or two were lost, the so-called star players should cease playing for the eleven.

The last matches were played with two or three short, so much so we looked ridiculous in others' eyes. Such things are unbecoming of a such great institution as ours, and that too when we have a paid man to train us in games. The practice of lending players from one eleven to another should cease. Then only can we instil interest into the other players who lose place in important matches just because the hockey stars are available.

Before closing this article. I would suggest the following:—

1. The election of the various sports captains be conducted in March so that as soon as the College reopens we can form the elevens and give them sufficient practice. This can combat that peculiar fortune of ours which makes us face the strongest league side, even at the opening of the league championship.

2. It must be made possible to send our representative when the fixtures are fixed for inter-collegiate league championship.

3. Regular days be allotted for each game and materials provided so that one and all can play the games.

In conclusion, I would request all our students, especially the civil students, to take more interest in games, to make it a point of seeing the College elevens in action and encouraging them, and, last of all, but not least, to play some game or other. I have to remind them of Wordsworth's couplet.

"Leave your books or you'll bend double,
Come out into the open."

And so anon.

SENEX.

Women Medico's Club.

Annual Report for 1937-38

The fourth anniversary of the Club was celebrated on a grand scale in the College premises on Saturday, the 12th February, commencing with sports. Dr. Chinnammu presided at the meeting at which the annual report and accounts were read. The entertainment commenced with fancy dress competition, in which many of the members took enthusiastic part. The gypsy girl carried away 1st prize. The other items were tap-dancing and music. After a grand dinner the function came to a close.

The following is the report submitted at the meeting:—

I deem it a great pleasure to present the annual report of the women Medicol's Club to all of you who have kindly gathered here to make today's function a success.

We started the activities of this year with a lively function in honour of the freshers enrolling themselves as members of this esteemed club. After tea, we had the usual business meeting with Dr. (Miss) Chinnammu in the Chair. The committee members were elected and two important resolutions were passed unanimously. They were: (1) that the Government should once again be approached to consider the purchase of a bus for the benefit of the women students of the College, and (2) that the present hostel for the lady students should be extended sufficiently to accommodate all the lady students who are staying at present in private or other recognised hostels. The resolutions were duly communicated to the then acting Principal, Dr. A. L Mudaliyar. Later we sent in a petition to him signed by all the members of Wallajah Bagh requesting him to do the needful with regard to the question of the hostel. Dr. Mudaliyar called together a committee including the Warden, the hostel committee and the lady representative of the College to decide the matter and to shift the hostel to the Park Hostel. Our profound thanks are due to him as he took immense trouble, and the latest information is that we will be actually shifting to the new buildings very soon. (Now we have shifted.)

Regarding the promised bus our hopes are shattered as the Government have definitely informed us that they are unable to consider the proposal in this year's budget.

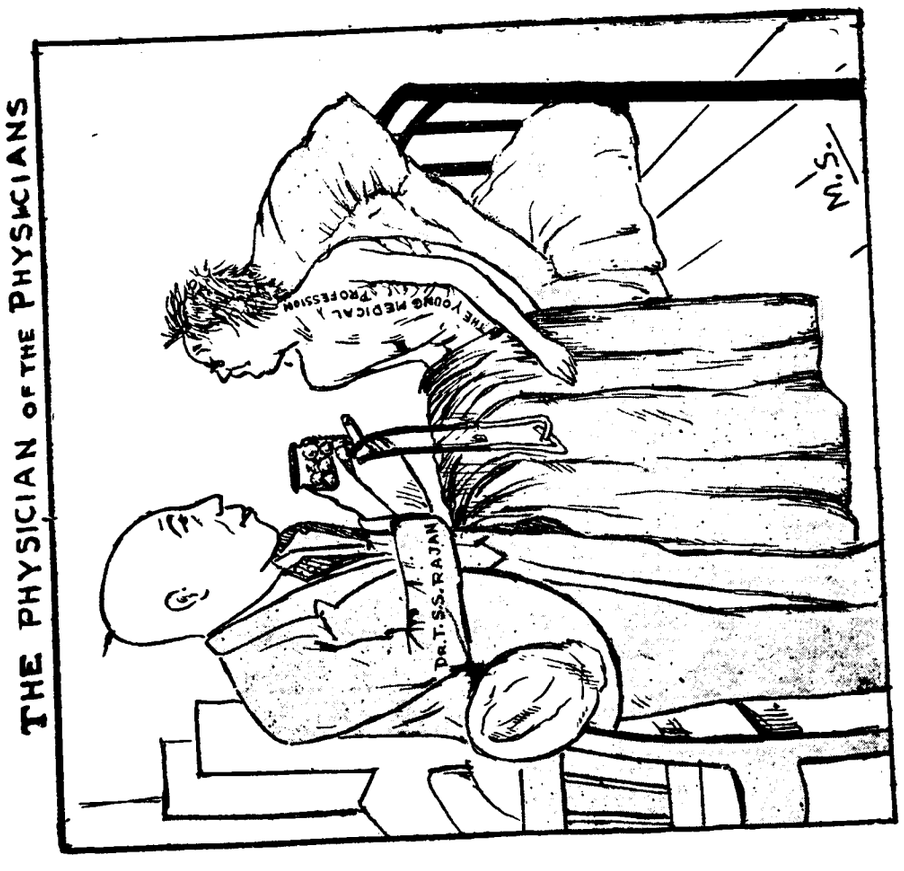
The proposal of the common hall mentioned in last year's report has also been dropped by the Government. During the course of the year we had one general body meeting and five committee meetings to discuss the activities of this Club.

In August, the Graduates of the year were given a hearty reception in the College grounds. Many of the old girls graced the occasion with their presence. After tea, Mrs. Hensman, the President, addressed the gathering and gave some valuable advice to the women who were getting into the open world as full-blown doctors. The graduates were introduced to the freshers in a unique and interesting

ON THE HONORARY SYSTEM

Dr.—Look here boy! This kind of half-eating and half-starving is no good for you; soon I'll starve you full. Then you'll see that it does you good. Till then be swallowing this pill.

—o—



manner. Two little girls thrilled the audience with their fine dance.

The farewell party to the final year students was held at the Red Hills. The response from the members was unusually good and a busful of girls with an enormous quantity of eatables left early in the afternoon. Those, who were visiting the place for the first time, were rather disappointed in the beginning as they could find neither 'hills' nor anything 'red'. Anyway they were satisfied with the beautiful scenery around and everyone enjoyed thoroughly. I daresay none of us can ever forget the boating we had just at twilight in the silent waters broken only by the shouting and singing from us. It was rather funny how the musical disposition became contageous.

On behalf of the Women Medico's Club, I thank the members who have contributed towards the success of this evening's function. Our thanks are due to our Principal and Vice-Principal for all help and advice they have given us. My personal thanks are due to the Treasurer, Lady Representative, Sports Secretary, the Committee members and the others who have worked for the Club.

MISS A. SAMUEL,
Hon Secretary,
Women Medico's Club.

Bye-Laws of the Madras Medical College Co-operative Club, Ltd., No. X 112.

The Madras Medical College Co-operative Club, Limited, No. X 112, is registered as a Co-operative Society under India Act VI of 1933. Its address shall be Park Town Post in the Madras City, the Madras District. Its operation shall be confined to the members employed in the College and the students of the College.

2. **Objects.**—The objects of the Club are :—

(1) The encouragement of thrift and self-help;

(2) The purchase of books, stationery and other articles required by the members;

(3) The carrying on in common, for the benefit of members, of the trade of general dealers;

(4) The establishment and the conduct on co-operative principles of such other lines of work or departments of business as may from time to time be resolved upon by the general body of members;

(5) The dissemination of the knowledge of co-operative principles and their realisation as far as practicable so as to promote such social, intellectual, moral and physical welfare of the members; and

(6) The doing of such other things as are incidental or conducive to the attainment of the above objects.

3. **Membership.**—The liability of the members of the Club shall be limited to the share capital subscribed by them.

4. The capital of the Club shall for the present be Rs. 5,000 made up of 5,000 shares of Rupee one each. The value of eacn share shall be paid in one lump sum on allotment.

5. Any person over 18 years of age competent to contract and employed in the College as a member of the College staff and any student of the College shall be eligible for admission as a member but no person can claim as a matter of right.

6. Applications for admission and for allotment of shares shall be made to the Secretary in the form, if any, prescribed by the Club for the purpose. Every such application shall be disposed of by the Board of Directors who shall have power to grant admission or to refuse it without assigning reasons.

7. Every member shall take at least one share, but no member shall take more than 20 shares. Every member shall pay an entrance fee of one anna for each share taken by him at the time of taking the share provided that the total payment of entrance fees by any one member for all the shares held by him shall not exceed Rupeee one.

8. No members shall be permitted to withdraw any of the shares held by them but they may with the previous sanction of the Board of Directors be permitted to be transferred to any of the existing members or to those whom the Board might be willing to admit as members. Shares might however be refunded in cases contemplated in the bye-law No. 9.

9. Should a member cease to be eligible for membership for any cause, the Club shall remove his name from the list of members and shall pay back within a reasonable period to such member, the share capital actually paid by him with the dividend declared, if any, after deducting therefrom the money, if any, due by him to the Club.

10. (1) If a member dies, his membership shall *ipso facto* cease.

(2) (*a*) Every member of the club may nominate any person to succeed, in the event of his death, to his share or interest in the Club. Such nomination shall, in the event of his death, be given effect to by the club provided—

(*i*) the nomination was signed by the deceased in the presence of at least two witnesses attesting the same;

(*ii*) the nomination has been registered in the books of the Society kept for the purpose; and

(*iii*) the person nominated shall have been admitted by the Board of Directors as a member of the Club under bye-law 6.

(*b*) In the event of there being no person nominated by the deceased and entitled to succeed to his share or interest in the Club the heir or legal representative of the deceased, or any person nominated by such heir or legal representative within one month of the death of the deceased member shall be entitled to succeed thereto provided such heir or legal representative or his nominee shall have been admitted by the Board of Directors as a member of the Club under bye-law 6.

(*c*) In the event of there being no person entitled to succeed under clause (*a*) or (*b*) of this bye-law to the share or interest of a deceased member of the Club, the Club shall pay to the nominee of the deceased or to his heir or legal representative, as the case may be, a sum representing the deceased member's share or interest at the time of his

death ascertained in accordance with the bye-laws of the Club.

11. (1) A past member shall be liable, as provided in bye law 3, for the debts due by the Club as they existed on the date when he ceased to be a member for a period of two years from such date.

(2) The estate of a deceased member shall be liable, as provided in bye-law 3, for debts due by the Club as they existed on the date of his decease, for a period of two years after his decease.

12. No member shall be permitted to transfer his share or shares or create a charge in respect of the same in favour of another member or person except with the previous sanction of the Board of Directors.

13. With the sanction of the Board of Directors a member may at any time increase the number of shares held by him so as not to exceed the limit of 20 shares laid down in bye-law 7.

14. **Funds.**—The funds of the Society shall be derived from the following sources only :—

(1) Share payments ;

(2) Entrance fees and other fees ;

(3) Trade deposits ; and

(4) Donations from persons interested in the work of the Club.

15. **Management.**—Subject to such resolutions as the general body may from time to time pass, the executive management of the affairs of the Club shall vest in a Board of Directors. The Board of Directors shall consist of seven members of whom one shall be the Principal of the College, who shall be the *ex-officio* President. The remaining members shall be elected by the general body once a year. Members of the Board continue in office after the expiry of the terms of office until by election another Board is constituted.

16. After the Board of Directors are elected by the general body, they shall meet and elect from among themselves a Vice-president and a Secretary. A retiring member of the Board of Directors shall be eligible for re-election. Interim vacancies on the Board may be filled up by the remaining members of the Board by co-option for the unexpired portion of the period. Any member of the Board of Directors except the President may at any time be removed by a resolution of the general body. Should a member of the Board of Directors absent himself from four consecutive meetings of the Board he shall cease to be a member of the Board of Directors, but may be reinstated by the Board of Directors. Meetings which are not held for want of quorum shall be considered as meetings for the purpose of this bye-law.

17. The Board of Directors shall meet once a month or oftener, if necessary, to conduct the affairs of the Club. No decision of the Board of Directors shall be valid unless it is assented to by at least four members. All questions shall be decided by a majority of votes, the President or the presiding member shall have a casting vote. No member of the Board of Directors shall be present at a meeting of the Board when any matter in which he is personally interested is being discussed. In case of urgency where there may not be sufficient time to convene a meeting of the Board of Directors and in all cases in which such a procedure may from time to time be prescribed by the Board of Directors, the Secretary may obtain the orders of the Board of Directors by circulation of papers among the members present at the headquarters of the Club. Such decisions arrived at by circulation shall be placed before the next meeting of the Board of Directors for their ratification. Should a difference of opinion arise in the course of such circulation the matter should not be decided by circulation but shall be placed before a meeting of the Board of Directors.

18. (*a*) The President shall have a general control over all the affairs of the Club and shall have the power to appoint the members of the establishment as well as to fine, suspend or dismiss them subject in the last two cases to the approval of the Board.

(*b*) The Secretary shall be responsible for the executive administration of the Club subject to the control of the President.

(*c*) The Secretary shall be the officer to sue or be sued on behalf of the Club and all bonds in favour of the Club shall be in the name of the President.

(*d*) The Vice-President shall have such powers and duties as the President may from time to time delegate to him. He shall be the *ex-officio* Treasurer and have the custody of all properties of the Club.

19. Receipts shall be issued for all moneys paid to the Club. For moneys paid by members the receipt shall be signed by the Secretary, who shall hand over all moneys collected to the *ex-officio* Treasurer who shall arrange to remit them to the Bankers.

20. It shall be the duty of the Board of Directors to maintain such accounts and registers as are prescribed by rule VII of the rules under the Act and by the Registrar from time to time, to place before a general body meeting of members the Registrar's notes of audit or inspection within one month from the date of receipt, to correspond with the Registrar and to do all other business relating to the Club.

21. The Board of Directors shall have power to prescribe from time to time the scale of office establishment and to incur such expenditure as may be necessary for the management of the Club with reference to the scale and

within the budget allotment sanctioned by the general body for each year. It shall be competent to the Secretary to incur petty contingent expenditure subject to a maximum of one rupee for any item.

22. The Board of Directors shall be competent to fix the amount and nature of the security, if any, given by the establishment.

23. It shall be competent to the Board of Directors to frame subsidiary bye-laws for the conduct of the business of the Club consistent with the Act, the rules under the Act and these bye-laws. Such subsidiary bye-laws shall be entered in the minute book of the Club and they shall be reported to the Registrar of Co-operative Societies for approval.

24. The services of the members of the Board of Directors shall be gratuitous.

25. **General Body.**—The ultimate authority in all matters relating to the administration of the Club shall be the general body of members who shall meet from time to time and at least once a year to conduct the work of the Club. The following among other matters shall be dealt with by the general body :—

(1) The election and removal of the Board of Directors except the President ;

(2) The annual report due to the Registrar of Co-operative Societies ;

(3) The Registrar's annual audit ;

(4) The amendment or repeal of any existing bye-law or the enactment of a new bye-law ;

(5) The expulsion of a member ; and

(6) The returns that may be prescribed by the local government.

26. A meeting of the general body of the members may be convened whenever necessary for the conduct of the business by the Board of Directors and shall be so convened by the Board of Directors at the request of fifteen or more members or at the instance of the Registrar or by a member of the governing body specially deputed by a resolution of the governing body of the union to which the Club is affiliated.

27. It shall be the duty of every member to attend the meeting of the general body. The quorum for a general body meeting shall be 15 or one-fourth of the total number of members on the list at the time, whichever is less. Associates may attend the general body meeting and take part in the discussions but they are not entitled to vote.

27-A. It shall be competent to the general body at the instance of the Board to appoint committees consisting of not more than three members

to transact such business and to do such duties as may be delegated to them to carry out the objects of the Club, suitable subsidiary bye-laws being framed for the purpose and the approval of the Registrar obtained thereto. The committee appointed shall be responsible to the Board of Directors and all their actions shall always be subject to the control of the Board of Directors. The services of the members of the committee shall be gratuitous but they may be paid such actual expenses as may be necessary with the sanction of the Board.

28. The President when present shall preside at the meetings of the general body. In his absense the Vice-President shall preside at the meeting. Every member present shall have one and only one vote. All questions shall be decided by a majority of votes of the members present and voting. When votes be equal, the Chairman of the meeting shall have a casting vote.

29. Three days' notice shall ordinarily be given to members before a meeting of the general body is convened.

30. If a member deceives the Club in any way, or if his general conduct is such as to render his removal necessary in the interests of the Club, it shall be open to the general body to expel such a member. An expelled member shall be paid all moneys due to him from the Club after deducting therefrom any money due from him to the Club. A member, who drives the Club to court to recover the money due from him, shall, for that reason, be expelled from membership. An expelled member shall be liable as provided in bye-law 3 for the debts due by the Club as they stood on the date of his expulsion for a period of two years after such expulsion.

31. The general body shall have power to affiliate the Club to any other registered society with similar objects and to incur the necessary expenses therefor. It shall also be competent to them to become a member of the Central Bank working within the area of its jurisdiction.

32. **Trade Deposit.**—A trade deposit is a deposit made by a member with the Club in advance of purchase in order to avoid paying cash every time a purchase is made from the Club. The deposit will not be made for a specified period and will not be allowed to be withdrawn in cash unless notice of at least one month is given. Whenever a member purchases articles from the Club the cost thereof shall be debited against his trade deposit. Every member paying a trade deposit will be supplied with a pass book and counterfoil indent book free of cost. A depositor who wishes to buy articles against his trade deposit shall send along with the pass book a requisition in the form of an indent book supplied for the purpose. No other requisition will be recognised. The pass book will, after issue of the articles, be returned with the cost of the purchase made noted in it, along with the indent book.

33. All the transactions by way of sales shall ordinarily be on the ready money system or under the system of trade deposits referred to in bye-law No. 32 and shall be confined to members.

34. The Board of Directors may, subject to the sanction of the Registrar and subject to such conditions as he may impose from time to time, empower the Secretary to buy from, and sell to, any co-operative society registered under India Act X of 1904 or Act II of 1912 such commodity or commodities as they may specify.

35. At the end of each quarter stock shall be taken and necessary depreciation allowed by the Board of Directors.

36. The net profits of the Club as declared by the Registrar of Co-operative Societies year after year shall be disposed of as shown below :—

(1) one-fourth shall be carried to the reserve fund ;

(2) out of the remainder a dividend not exceeding one pie per rupee per mensem may be paid to the members proportionately to the amount of paid-up share capital held by each ;

(3) a sum not exceeding 7½ per cent of the net profits may be carried to the credit of the common good fund to be utilized for any of the purposes mentioned in section 2 of the Charitable Endowments Act VI of 1890 (India) ;

(4) a bonus at a rate to be fixed by the general body on the recommendation of the Board of Directors shall be divided among the members and associates according to the amount of purchases made by them during the year ; and

(5) the balance, if any, shall be carried to the reserve fund. All undisbursable and indivisible profits shall be added to the reserve fund.

37. **Reserve Fund.**—The reserve fund shall belong to the Club as a whole and is intended to meet unforeseen losses. No member can claim a share. It shall be invested in such a manner as the Registrar of Co-operative Societies prescribes ; it shall not be drawn upon except with his sanction.

38. If, however, at any time the general body resolves to split the Club into more than one society by excluding a portion of the existing area of operations from the operations of the Club and should a new society or societies be registered to cover the area so excluded a portion of the reserve fund shall be transferred to the Club or as decided upon by the general body which resolves upon the splitting of the original club.

39. **Miscellaneous.**—No amendment or alteration in, or cancellation of, a bye-law nor the enactment of a new bye-law shall be made except at a general meeting of the members or shall take effect until it has been approved by the Registrar.

40. Should any doubt arise as to the construction of the Act or any bye-law, the Board of Directors shall refer the same to the Registrar of Co-operative Societies for advice and act according to his advice.

41. The Club shall prepare annually in such form as may be prescrib by the Registrar (*a*) a statement showing the receipts and disbursement for t year, (*b*) a profit and loss account, (*c*) a balance-sheet, and (*d*) such oth statements as may be prescribed by the Registrar. The statements shall a be made up to 30th June. After the Registrar has verified the statements ar granted his audit certificate the Club shall publish such of the prescribe statements as he may direct in the manner prescribed by him

42. Disputes touching the business of the Club shall be dealt with in th manner required in section 51 of the Madras Co-operative Societies Act VI o 1932 and under the rules framed thereunder. The decision of award unde the said section shall be enforced in any of the ways laid down in th Co-operative Societies Act or the rules framed under the said Act.

43. The business of the Club shall always be conducted outside College hours.

8. Powers of the Committee.—The Executive Committee shall have power to make such bye-laws as it may deem necessary from time to time for the management of the affairs of the Association ; but such by-laws should be brought up for ratification at the next General Body meeting.

The Executive Committee may appoint a sub-Committee from among themselves or a special Committee from the members of the Association for transacting any particular business and may delegate any of its powers to such committees.

9. The Working of the Association.—(*a*) The Executive Committee shall have control over all affairs of the Association including the supervision of the policy of the Magazine, but the details of the latter shall be worked out by the Magazine Committee.

(*b*) The General Secretary of the Association shall be directly responsible for arranging the details of the social gatherings, including the Graduates' Reception and the periodical lectures, and for the maintenance of the books of the Association.

The General Secretary who is also the Secretary to the Magazine Committee shall be responsible for the regular publication of the Magazine and for the proper maintenance of the books concerning the Magazine.

(*c*) The Reading Room in the College Common Hall shall be directly under the control of the General Secretary.

(*d*) A paid clerk can be appointed to look after the affairs of the Association, the Magazine and the Reading Room. He shall work under the instructions of the Treasurer and the General Secretary.

10. Finances.—This shall come under two heads :—

(*a*) Funds of the Association ; (*b*) Funds of the Magazine.

(*a*) *Funds of the Association.*—These shall consist of : (*a*) subscriptions paid by the students at the commencement of the year; (*b*) donations from Professors, Assistant Professors and Old Boys ; and (*c*) special subscriptions raised from students or staff on special occasions, if any. The Executive Committee shall have control over the finances, the Treasurer being responsible for the maintenance of correct accounts. The accounts shall be passed by the Executive Committee once in three months, and shall be audited at the end of each year by an independent auditor appointed by the Committee. The auditor's certificate with his remarks shall be appended to the balance-sheet in the annual report. The funds of the Association shall be deposited with the Post Office Savings Bank or any other recognised Banking Institution in the name of the President or either of the Vice-Presidents (separate from the Magazine funds).

(*b*) *The Magazine Funds* consist of : (*a*) a compulsory subscription of Rs. 2 per annum raised from the students of the Pre-Registration, 1st, 2nd, 3rd, 4th and 5th Year Classes ; (*b*) subscriptions from the other students either of this College or other institutions ; (*c*) subscriptions and donations from the

members of the staff and others ; and (*d*) income from advertisements. The Magazine Committee shall have control over the finance of the Magazine. The Treasurer shall be responsible for all receipts, and shall maintain proper account of the expenditure, with all the vouchers and counterfoils.

The accounts shall be passed by the Magazine Committee once in three months and shall be audited at the end of each year by an auditor appointed by it.

The receipts of the Magazine shall be deposited just as the Association funds, but separately.

11. The Magazine.—(1) The Magazine shall be called the "Madras Medical College Magazine."

(2) It shall be issued four times during the year—in June, September, November and February.

(3) *Subscription :* (*a*) Rs. 2 from students, House-Surgeons and House-Physicians, and (*b*) Rs. 4 from staff and others, in each case excluding postage.

(4) *Advertisements* :—It should be the aim of the publisher to get as many advertisements as possible for which he may, subject to the approval of the Committee, appoint agents on reasonable commission.

The nature and rates of advertisements may be left to the discretion of the publisher subject to the approval of the Committee.

12. Miscellaneous.—(1) The Annual General Body meeting shall be held in March before the College closes, at which the Annual Report of the year shall be presented and passed and the General Secretary for the next year be nominated.

(2) The quorum for a General Body meeting shall be 30 per cent or 60 whichever is less.

(3) The newly elected Secretary shall take charge soon after the elections.

(4) The General Secretary shall record the proceedings of meetings.

(5) Not less than three days' notice shall be given for all meetings.

(6) Any amendment of the Rules or any matter concerning the Association proposed by any member shall be considered at the next business meeting by giving 15 days' notice to the Executive Committee.

(7) These rules shall not be altered in any General Body Meeting, unless 40 per cent of the members are present.

University of Madras.

PRE-REGISTRATION EXAMINATION, 1937.

INORGANIC CHEMISTRY.

Friday, 10*th December*—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Show, with the aid of graphs, how gases deviate from Boyle's law. How are these deviations explained? [16]

2. State the law of partition of distribution.

Benzoic acid was shaken with water and benzene and its distribution, in three determinations, was found to be as given below:—

	Concentration in water	Concentration in benzene.
1.	0·012	0·16
2.	0·015	0·25
3.	0·018	0·36

What conclusion do you draw from the above results? [18]

3. In what respects does matter in the colloidal state differ from matter in the molecular state of dispersion? [16]

PART II.

4. Describe any two methods by which the degree of ionization of a salt in solution may be determined.

Show that, in weak electrolytes, the degree of ionization is proportional to the square root of the dilution. [18]

5. Outline the general conditions necessary for a typical catalytic reaction to proceed satisfactorily. [16]

6. Explain the nature of radio-activity, and show how progressive atomic disintegration can lead to the formation of isotopes. [16]

PHYSICS.

Friday, 10*th December*—2 *to* 5 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Explain what is meant by the *surface tension* of a liquid. Describe how you would measure the surface tension of water at laboratory temperature by observing the pull of the surface on a flat glass plate. How is surface tension affected by temperature? [16]

2. Define *wave length* and *frequency*.

Two bells are struck regularly and together 40 times per minute. At first they are equidistant from an observer, but the distance of one is gradually increased. Assuming the velocity of sound to be 1,120 feet per second, calculate how far this bell has to be moved before the observer will again hear them sounding together. [16]

3. Write short notes on—
(*a*) the Gauss points of a lens system;
(*b*) the variation of the temperature of the atmosphere with altitude;
(*c*) ultra-violet light;
(*d*) thermionic emission. [18]

PART II.

4. Describe the construction and principles of working of—(*a*) a high vacuum pump system, and (*b*) a hot cathode X-ray tube. [18]

5. Outline *two* methods of measuring the mechanical equivalent of heat. Which will yield more heat, a 50-ohm resistance connected across a 50-volt line, or a 100-ohm resistance connected across a 100-volt line? [16]

6. Describe the *eye* as an optical instrument. Explain clearly the defects to which the eye is liable, and the methods of correcting them. [16]

BIOLOGY.

Saturday, 11*th December*—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Give an account of the structure and reproduction of *three* of the Protozoa, and point out the differences between Protozoa and Metazoa. [16]

2. Write short notes on :—parenchyma; aleurone grains; fibro-vascular bundles; lactiferous tissue. [18]

3. Give an account of the first appearance and development of the amnion and allantois. In what animals do they occur? What appear to be their functions? [16]

PART II.

4. What are Xerophytes? Point out the special adaptations exhibited by such plants to their surroundings. [16]

5. Give an account of the working mechanism of the Frog's heart. How does it differ from that of mammalian heart? Illustrate your answer by means of diagrams. [18]

6. Describe the life-history of a Fern, and compare it with that of an Angiosperm. [16]

FIRST M.B. AND B.S. EXAMINATION, 1937.

ORGANIC CHEMISTRY.

Monday, 22nd November—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. What are amines? In what respects do primary amines differ from secondary amines? [8]

2. From benzoic acid how would you prepare (*a*) ethyl benzoate, (*b*) benzoyl chloride, (*c*) benzoic anhydride, and (*d*) benzamide? [8]

3. Write short notes on:—(*a*) synthesis of urea; (*b*) hydrolysis of fats; (*c*) glucosides. [9]

PART II.

4. Compare the properties of aromatic alcohols and phenols. Describe the preparation of any *one* aromatic alcohol and its phenolic isomer, starting in each case from the corresponding hydrocarbon. [8]

5. What do you know of the chemical nature of the following substances:—pyroligneous acid, petroleum, butter, beeswax, quinine, tannic acid? [9]

6. Explain what is meant by optical activity with reference to lactic acid as an example. Describe how the optically active components can be obtained from a sample of the inactive acid. [8]

ANATOMY, INCLUDING ELEMENTS OF HUMAN EMBRYOLOGY.

Monday, 22nd November—2 *to* 5 *p.m.*

NOTE.—*Separate* books must be used for the two parts.

PART I.

1. Describe the abducent (sixth cranial) nerve. [17]

2. Give a full account of the seminal vesicle including its development. [16]

3. Describe how you would expose the head of the femur, by dissection, from the anterior aspect. [17]

PART II.

4. Describe the first intermetacarpal space. [16]

5. Describe the vertebral artery. Give a short account of its development. [17]

6. Describe in detail ascending colon including its vascular supply, lymphatic drainage and development. [17]

PHYSIOLOGY, INCLUDING BIO-CHEMISTRY.

Tuesday, 23rd November—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates should use *separate* books for Parts I and II. Illustrate your answer with diagrams where possible.

PART I.

1. Discuss the qualities of *milk* as an article of food, and describe the mechanism of its secretion. [16]

2. How may vaso-dilatation be produced in the body? How would you demonstrate experimentally the variations in the blood-supply of an organ? [17]

3. Describe the connexions of the cerebellum with the rest of the nervous system, and explain their physiological significance. [17]

PART II.

4. Discuss the sources of the energy set free in muscular contraction. [16]

5. Describe the minute structure of a sweat gland. What are the conditions which determine the activity of these glands? State the uses of the secretion. [17]

Give an account of the structure and functions of the cortex of the suprarenal gland. [17]

SECOND M.B. AND B.S. EXAMINATION, 1937.

PHARMACOLOGY.

Monday, 22nd November—10 *a.m. to* 1 *p.m.*

PART I.

1. Describe the action of digitalis on the mammalian heart. How does the action differ from that of quinidine in auricular fibrillation? [18]

2. Discuss the action of the following when given (*a*) by mouth and (*b*) intravaneously:—(i) magnesium sulphate, (ii) adrenaline, (iii) sodium sulphate, (iv) sodium and antimony tartrate. [16]

3. A drug is said to lower the blood-pressure when injected intravaneously. How would you proceed to ascertain its mode of action? [16]

PART II.

4. Discuss the action and uses of alcohol as a medicinal agent. [16]

5. Describe the fate in the body of—(*a*) arsenical compounds administered by intramuscular and intravaneous injections, (*b*) ammonium carbonate and ammonium chloride given orally, and (*c*) ferrous sulphate given by mouth. [18]

6. Prescribe hypnotics suitable for the treatment of lack of sleep due to the following conditions:—(*a*) worry, (*b*) serve headache, (*c*) persistent dry cough, (*d*) acute mania. [16]

HYGIENE.

Monday, 22nd November—2 to 5 p.m.

PART I.

1. Write brief notes on:—(*a*) deep well, (*b*) vitamin D, (*c*) nitrogen cycle, and (*d*) maternity and child welfare centre. [20]

2. Enumerate the chief diseases that may be caused or transmitted by food, and indicate the modes of prevention. [15]

3. State briefly the measures for the prevention and control of the following diseases:— (*a*) rabies, (*b*) diphtheria, (*c*) guinea worm disease. [15]

PART II.

4. What is the necessity for the medical inspection of school children? [20]

5. Mention the diseases associated with soil pollution; state briefly the preventive measures required to be adopted in the case of any one of them. [15]

6. What is in your opinion, the best method of sewage treatment and disposal for a city like Madras? Give reasons. [15]

GENERAL PATHOLOGY, INCLUDING BACTERIOLOGY.

Tuesday, 23rd November—10 a.m. to 1 p.m.

PART I.

1. Describe the microscopic structure of a lymph gland and the changes it undergoes in either (*a*) acute adenitis, (*b*) Hodgkin's disease; or (*c*) lymphoid leukæmia, (*d*) metastatis of a carcinoma of the breast. [16]

2. Describe the structural and functional changes which may occur in the cardiovascular system as the result of chronic interstitial nephritis. [16]

3. Describe the microscopic and cultural characters of the pneumococcus. State the method you would employ to obtain a pure culture of the micro-organism from sputum. What evidence is available to lead us to believe that pneumonia is a communicable disease due to the pneumococcus? [18]

PART II.

4. Give a short account of the pathology of the various types of œdema. [18]

5. Describe the post-mortem appearances which you would expect to find in a person who died of typhoid fever. [16]

6. Describe the structure and life history of *filaria medinensis* and the lesions caused by it. [16]

OPHTHALMOLOGY.

Tuesday, 23rd November—2 to 5 p.m

PART I.

1. Describe the operation of tarsorrhaphy. [8]

2. What do you mean by sympathetic ophthalmia? What are the main methods used in its treatment? [9]

3. How would you examine the lachrymal passages? What do you mean by acute dacryocystitis? [8]

PART II.

4. What signs and symptoms do you expect to find in a typical case of interstitial keratitis? How would you treat the condition? [9]

5. Describe the ophthalmoscopic appearances in a case of *Retinitis Pigmentosa.* [8]

6. What do you mean by 'after cataract'? How would you diagnose this condition, and what treatment would you adopt? [8]

FINAL M.B. AND B.S. DEGREE EXAMINATION, 1937.

FORENSIC MEDICINE.

Monday, 22nd November—10 a.m. to 1 p.m.

PART I.

1. What post-mortem signs would you find in death from drowning? Discuss the value of each sign as proof of drowning, and for or against suicide. [16]

2. What are the causes of suicide in India? Compare and contrast the appearances in hanging and strangulation. [17]

3. Write short notes on:—(*a*) grievous hurt, (*b*) superfœtation and super-fæcundation, (*c*) assault and battery and (*d*) sterility and impotence. [17]

PART II.

4. Describe the procedure and appearances to be looked for and recorded in the post-mortem examination of cases where death appears to have been due to chest injury, or to have occurred by asphyxia. [17]

5. Describe the symptoms and the treatment in a case of oxalic acid poisoning. [16]

6. Describe fully the facts which would lead you to determine whether a case of cut-throat was of homicidal or suicidal nature. [17]

MEDICINE.

Monday, 22nd November—2 to 5 p.m.

PART I

1. Write what you know about hydrophobia in man and its treatment [15]

2. What are the causes of hæmaturia, and how would you distinguish them? [18]

3. How would you treat a case of early tuberculosis of the lungs? [17]

PART II.

4. Mention the causes of enlarged liver and spleen in children, and briefly discuss their differential diagnosis. [18]

5. Describe a case of acute rheumatic fever, and mention its complications. [16]

6. Describe, with the help of diagrams, the development of *Plasmodium Vivax* in the human body. How would you treat a case of this infection? [16]

SURGERY.

Tuesday, 23rd November—10 a.m. to 1 p.m.

PART I.

1. Discuss the complications and treatment of carbuncles of the face. [17]
2. Discuss the diagnosis and treatment of carcinoma of the bladder. [17]
3. Describe the treatment of fractures of the astragalus. [16]

PART II.

4. Discuss the factors which influence the spread of abscesses originating from tuberculosis of the vertebral column. [17]

5. What are the common causes and sites of œsophageal obstruction? [17]

6. What is the "pre-sacral" nerve? What is its function? Under what circumstances may it assume surgical importance? [16]

OBSTETRICS AND GYNÆCOLOGY.

Tuesday, 23rd November—2 to 5 p.m.

PART I.

1. Discuss the diagnosis, prognosis, and treatment of eclampsia [16]

2. Discuss the indications for internal podalic version. Describe the operation; state briefly the complications you may meet with, and how you would deal with the same. [17]

3. What are the causes of retained placenta? What conditions would determine your method of treatment, and how would you deal with them? [17]

PART II.

4. Trace the course of gonorrhœa in the female genital tract; and discuss the treatment in adolescence and in childhood. [17]

5. Discuss the causes of amenorrhœa. What is your method of investigation and treatment? [16]

6. What are the various types of cancer of the cervix? What is the differential diagnosis of an early case? Discuss the treatment of carcinoma of the cervix. [17]

EXAMINATION FOR THE DIPLOMA IN MIDWIFERY (D.G.O.), 1937.

MIDWIFERY.

Monday, 11th October—10 a.m. to 1 p.m.

I. Describe in detail the effects of utero-gestation on the maternal organism. [25]

II. Discuss the modern views regarding the Toxæmias of pregnancy and their successful management. [25]

III. When is the induction of abortion justifiable? Describe in detail the method you consider best for inducing abortion. [25]

IV. Discuss the causes of dystocia due to conditions of the maternal passages other than of bony origin. Indicate briefly the management. [25]

GYNÆCOLOGY AND DISEASES OF THE NEW-BORN CHILD.

Monday, 11th October—2 to 5 p.m.

I. Discuss the ætiology, pathology and treatment of Procidentia Uteri. [25]

II. What congenital deformities may be found in the new-born child? How would you manage them? [25]

III. Discuss the results of X-ray and radium treatment on benign conditions of the uterus. [25]

IV. A woman aged 34 years complains of pain in the lower abdomea and back-ache which becomes worse during menstruation. She has had n child at the age of 18 and aborted once in her 27th year. Examination reveals a fixed mass on the left side of the pelvis. Discuss the diagnosis and treatment of this case. [25]

M.D. DEGREE EXAMINATION, 1937.

BRANCH I.

MEDICINE INCLUDING MENTAL DISEASES AND PATHOLOGY I.

Tuesday, 6th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—All the questions to be attempted.]

I. Discuss the ætiology, pathology, symptoms, complications and prognosis of " High blood pressure."

II. Discuss the general principles which guide our treatment of heart disease and briefly mention how you would meet the various symptoms.

III. Discuss the pathogenesis and treatment of what is known as " Bronchial asthma."

IV. Give a short account of Eczema and its treatment.

MEDICINE, INCLUDING MENTAL DISEASES AND PATHOLOGY II.

Wednesday, 7th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—All the questions to be attempted.]

I. Hyperthyroidism. Give an account of its clinical aspects, diagnosis, prognosis and treatment.

II. Write an essay on headache and give a full account of the differential diagnosis of a case in which that symptom is the main feature.

III. Hæmatemesis. In what circumstances would you advise surgical operation?

BRANCH II.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN, INCLUDING PATHOLOGY I.

Tuesday, 6th April—10 *a.m. to* 1 *p.m.*

I. Discuss the ætiology and treatment of labour prolonged by abnormalities and in co-ordination in the Expulsive Forces.

II. Discuss the pathology, diagnosis and treatment of concealed accidental Hæmorrhage.

III. Discuss the Prophylaxis of Puerperal Sepsis.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN, INCLUDING PATHOLOGY II.

Wednesday, 7th April—10 *a.m. to* 1 *p.m.*

I. Give an account of the development of the Graafian Follicle and the changes it undergoes throughout its history. Describe its importance with reference to the function of Menstruation. [33]

II. Describe the lymphatic drainage of the Genital (female) tract, and indicate how this affects Gynæological problems. [33]

III. Give an account of the modern views on the ætiology of Dysmenorhœa and discuss their bearing on treatment. [34]

MIDWIFERY: ESSAY.

Thursday, 8th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—The candidate is expected to set forth his ideas in a clear and orderly manner, and to examine critically the various views and suggestions that have been put forward with regard to the subject selected. Account will be taken, not only of knowledge of detail, but also the power to construct a lucid and well co-ordinated essay.]

Write an essay on—

Utopia in Midwifery in the Madras Presidency

or

The problem of Anæmia in the Parturient Woman.

BRANCH IV.

TROPICAL MEDICINE, INCLUDING THE PATHOLOGY OF TROPICAL DISEASES I.

Tuesday, 6th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—All the questions to be attempted.]

I. Write an essay on Yaws to include geographical distribution, epidemiology and endemiology, pathology, symptoms, differential diagnosis and treatment.

II. Give an account of the clinical manifestations of infection with the chigger flea (Tunga penetrans). Give its life history. Discuss the treatment and prophylaxis of this condition.

III. Give a list of the principal trematode infections of man and state their geographical distribution. Give an account of any one trematode infection with life history, pathology, clinical picture, treatment and prophylaxis.

TROPICAL MEDICINE, INCLUDING THE PATHOLOGY OF TROPICAL DISEASES II.

Wednesday, 7th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—All the questions to be attempted.]

I. Give a general account of peliagra under the headings, definition, geographical distribution, epidemiology and endemiology, ætiology, symptomatology and pathology.

II. Enumerate the pathological conditions known to occur as a result of infection with Filaria bancrofti. Give a description of the method by which this parasite is transmitted to man.

III. What diseases caused by filterable viruses occur chiefly in tropical or sub-tropical countries? Discuss, in general terms, any one of those enumerated which is not known to occur in India.

IV. Which out of the following list of diseases are restricted in their geographical distribution of seasonal prevalence in India by climatic factors? Give your reasons in the cases selected :—

Malaria, Plague, Smallpox, Kala azar, Influenza, Relapsing fever, Epidemic Typhus, Sandfly fever, Beri-beri, Cholera, Leprosy, Rat-bite fever.

(COMMON TO ALL BRANCHES.)

MEDICINE (GENERAL).

Monday, 5th April—10 *a.m. to* 1 *p.m.*

[*N.B.*—All the questions to be attempted.]

I. What diseases give rise to sore throat? Give the differential diagnosis of the three principal ones.

II. What is the meningeal syndrome and what are the uses of lumbar puncture?

III. Write a note on Paroxysmal dyspnœa.

IV. Give the symptoms, signs and defferential diagnosis of acute pericardial disease and of chronic adhesive pericarditis.

V. Enumerate the symptoms and signs which constitute the mediastinal syndrome. How may the principal conditions giving rise to it be differentiated?

M.S. DEGREE EXAMINATION, 1937.

SURGERY—PAPER I.

Monday, 5th April—10 *a.m. to* 1 *p.m.*

[N.B.—Candidates must answer all the four questions.]

I. Describe the Tumours of the Maxilla. Discuss their differential diagnosis and treatment.

II. Discuss the pathology, and treatment of Fractures in the region of the Ankle Joint.

III. Discuss the pathology, diagnosis and treatment of Abscess of the Lung.

IV. Discuss the difficulties and dangers of Cholecystectomy. What Complications and Sequelæ may occur and how would you treat them?

SURGERY—PAPER II.

Tuesday, 6th April—10 *a.m. to* 1 *p.m.*

[N.B.—Candidates must answer all the four questions.]

I. Mention the different Spinal Tumours and discuss their clinical signs, symptoms, diagnosis and prognosis.

II. Classify Cancers of the Larynx. Discuss their prognosis and treatment.

III. Discuss the causes of chronic obstruction at the Ileo-Cæcal junction, their differential diagnosis and treatment.

IV. Discuss the ætiology, clinical signs, symptoms, diagnosis and treatment of Hydronephrosis.

SURGICAL ANATOMY AND PATHOLOGY—PAPER III.

Wednesday, 7th April—10 *a.m. to* 1 *p.m.*

[N.B.—Candidates must answer all the four questions.]

I. Discuss the pathology of Retro-peritoneal Tumours.

II. Give an account of the pathology of Ischæmic Contracture (Volkmann's). Discuss the various operative measures that have been tried in this condition.

III. Describe the surgical approach to the hip-joint and discuss the value of re-constructive surgery of the hip-joint for Osteo-Arthritis.

IV. Discuss the embryology and pathology of congenital Cysts of the neck.

PRE-REGISTRATION EXAMINATION, 1938.

INORGANIC CHEMISTRY,

Monday, 4th April—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. What is meant by *ionization constant?* Describe a method by which this constant may be determined for a weak acid.

Given the *ionization constant* for lactic acid is $1{\cdot}36\times10^{-4}$, calculate the p_H of a normal solution of the acid. [16]

2. Discuss the action of salts on (*a*) suspensoid sols, and (*b*) emulsoid sols. [18]

3. Draw diagrams illustrating the use of the following :—(*a*) osmometer; (*b*) colorimeter ; (*c*) hæmatocrit ; (*d*) conductivity cell. [16]

PART II.

1. What are conductometric titrations? How are they effected? What are their advantages? [16]

2. Indicate, by means of graphs, the types of vapour pressure curves given by binary mixtures of completely miscible liquids in varying concentrations. Explain the occurrence of constant boiling mixtures. [18]

3. What do you understand by—isomorphism, isotopes, transition elements, and covalencies? [16]

PHYSICS.

Monday, 4th April—2 *to* 5 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Describe how you would measure the following quantities in the laboratory :—

(*a*) the co-efficient of viscosity of castor oil ;

(*b*) the wave length of the green light from a mercury vapour lamp. [18]

2. Give a physical explanation of the following :—

(*a*) The distant surface of a tarred road on a hot day presents the appearance of a sheet of water.

(*b*) An aeroplane inclines when changing direction.

(*c*) An old 256 fork and a new one when sounded together produce beats.

(*d*) The focal length of a converging lens is greater in water than in air. [16]

3. Draw a diagram to show the lines of force near a bar magnet placed in the magnetic meridian with its N. pole pointing south.

If a neutral point is found at 15 cm. from the centre of the magnet, calculate its pole strength when the length of the magnet is 5 cm. and $H=0{\cdot}35$. Where would you find the other neutral point? [16]

PART II.

1. Describe the important parts of a spectrometer, and give, in their proper order, the adjustments you would make before using the instrument.

Explain the nature of the spectrum observed when each of the following sources is placed before the slit :—(*a*) a sodium lamp, (*b*) the glowing end of a cigarette, (*c*) a mirror reflecting moonlight. [18]

2. Derive a formula for calculating the equivalent resistance of conductors arranged in parallel.

54 inches of a given wire have a resistance of 9 ohms. The wire is cut into 18-inch lengths, and these are arranged in parallel. Find the resistance of the combination. [16]

3. Write short notes on :—(*a*) the moment of inertia of a vibrating body ; (*d*) the adiabatic expansion of a moist air ; (*c*) radiations from crystals of uranium nitrate ; (*d*) a compensated pendulum. [16]

BIOLOGY.

Tuesday, 5th April—10 a.m. to 1 p.m.

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Give an illustrated account of the typical process of cell-division. What is the advantage of so complicated a process? [16]

2. (*a*) In what respects is a dog's skull adapted to a carnivore's life?

(*b*) What are the salient characters of a mammal's skull? [16]

3. Explain the following terms :—schizogony ; hybridism ; pseudocarp ; nitrification ; saprophytism ; bladderworn. [18]

PART II.

1. What is meant by "alteration of generations"? Illustrate your answer from the life history of the Fern. [16]

2. Give an account of the chief poisonous snakes of South India, and state how you would identify them. [18]

3. What is the importance of the leaf in the physiological activities of a plant? [16]

FIRST M.B. AND B.S. EXAMINATION, 1938.

ORGANIC CHEMISTRY.

Monday, 4th April—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Describe *two* methods for the determination of chlorine in organic compounds. [8]

2. Describe a method of preparation, properties, and principal uses of each of the following substances:—(*a*) ethylene, (*b*) chloral hydrate, (*c*) nitrobenzene, (*d*) Salicylic acid and (*e*) resorcinal. [9]

3. Describe the isomerism of the tartaric acids. [8]

PART II.

1. Describe how you would prepare chloroform in the laboratory What happens when chloroform is exposed to light and air? How would you ascertain if a given sample has been subjected to such treatment? [8]

2. Indicate the reactions by which acetic acid can be converted into—(*a*) acetaldehyde, (*b*) acetone, (*c*) propionic acid.

The calcium salt of a monobasic aliphatic acid gave upon heating a distillate which reacted with hydroxylamine to give a derivative containing 13·9 per cent of nitrogen. Calculate the molecular weight of the acid, and suggest its possible molecular formula. [9]

3. How would you distinguish between—(*a*) hexane and benzene, (*b*) ethyl nitrite and nitro-ethane, (*c*) phenol and benzyl alcohol, (*d*) aniline and toluidine? [8]

ANATOMY, INCLUDING ELEMENTS OF HUMAN EMBRYOLOGY.

Monday, 4th April—2 to 5 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

PART I.

1. Describe the hypophysis cerebri (pituitary body) [17]

2. Give a detailed account of the uterine tube. State briefly how it is developed. [17]

3. Describe the upper end of the humerus. How does the humerus ossify? [16]

PART II.

1. Describe the formation, course, relations, distribution, and variations of the phrenic nerve. [17]

2. Draw and describe a transverse section of the thorax, passing through the bifurcation of the pulmonary artery. [17]

3. Give a short account of lymphatic drainage of the lower limb. [16]

PHYSIOLOGY, INCLUDING BIO-CHEMISTRY.

Tuesday, 5th April—10 *a.m. to* 1 *p.m.*

NOTE.—Candidates must use *separate* books for Parts I and II.

Illustrate your answers with diagrams where possible.

PART I.

1. How may records of arterial and venous pulses be obtained in man? Describe the chief features of such records. [16]

2. Describe the reticulo-endothelial system and its functions. [17]

3. How is the calcium content of the blood regulated? Describe the role of calcium in the body. [17]

PART II.

1. Give an account of the physiological changes that take place in the body on reaching high altitudes, and the compensatory reactions that occur by prolonged stay there. [17]

2. Describe the sensory nerve endings in voluntary muscle and tendon. What part do afferent impulses from these end organs play in the regulation of movements? [17]

3. What information regarding metabolism can be obtained from the study of a depancreatized animal? [16]

SECOND M.B. AND B.S. EXAMINATION, 1938.

PHARMACOLOGY.

Monday, 4th April—10 *a.m. to* 1 *p.m.*

PART I.

1. Mention the pharmacopœial (B.P.) preparations containing vitamins Describe their action. [15

2. Describe briefly the action of each of the following pharmacopœia (B.P.) preparations:—(*a*) *Oleum Iodisatum*, (*b*) *Tinctura Lobeliæ ætherea* (*c*) *Liquor Glycerylis Trinitratis*, (*d*) *Injectio Mersalyli.*

State how and for what purposes these are used. [20

3. Discuss the meaning of the terms—'tolerance', 'cumulation' 'addiction' as applied to medicinal substances, and mention *two* example of each. [1

PART II.

1. Describe the pharmacological actions of alcohol. Which of these actions can be made use of in therapeutics? [16]

2. Mention drugs which (*a*) raise the body temperature, and (*b*) lower raised temperature. Classify the latter, and describe their mode of action. [18]

3. What is caffeine? What other drugs belong to the caffeine group? Describe the pharmacological action of caffeine. [16]

HYGIENE.

Monday, 4th April—2 to 5 p.m.

PART I.

1. What is a health unit? Describe its functions. [17]

2. Describe pasteurization of milk, and give its advantages. What is the general character of milk-borne outbreaks of disease? [17]

3. How is vaccine lymph prepared and preserved? [16]

PART II.

1. What are the nutritional functions of (*a*) proteins, (*b*) fats, and (*c*) carbohydrates?

State the average daily requirements of each of the above for an adult individual at rest. [17]

2. Discuss the relative merits of the following sources of water-supply for drinking purposes:—(*a*) river water, (*b*) deep well with pump, and (*c*) step well.

How would you find out if the water in a well is contaminated from a neighbouring cesspool? [17]

3. Discuss briefly the comparative advantages and disadvantages of the several methods adopted for the disposal of the dead.

What are the requirements that should be satisfied in the selection of a site for a burial-ground? [16]

PATHOLOGY AND BACTERIOLOGY.

Tuesday, 5th April—10 a.m. to 1 p.m.

PART I.

1. Describe the *bacillus pestis*, its cultural character, and the lesions caused by it in man. [15]

2. Describe the naked-eye and microscopical appearances of—

(*a*) the lung, in lobar pneumonia in the stage of grey hepatization;

(*b*) the liver, in congenital syphilis. [20]

3. How is embolism caused? What results may follow the condition? Give a brief account of the ætiology and pathology of pulmonary embolism. [15]

PART II.

1. Describe the morphological characters of and the lesions produced in man by—(*a*) *leishmania tropica*, (*b*) *leishmania donovani*.

Has this group of parasites been cultured *in vitro*? If so, describe in detail *one* of the methods which may have been employed. [15]

2. Describe the autopsy findings in an advanced case of aortic stenosis. [20]

3. Write short notes on—(*a*) cerebral softening, (*b*) the disposal of bilirubin in health and disease, (*c*) the stool in amœbic dysentery. [15]

OPHTHALMOLOGY

Tuesday, 5th April—2 to 5 p.m.

PART I.

1. What are the causes of interstitial keratitis? How would you treat it? [9]

2. Describe the operation of iridectomy for a case of acute congestive glaucoma. [8]

3. How would you diagnose a case of post-neuritic atrophy of the optic nerve by ophthalmoscopic examination? [8]

PART II.

1. How would you treat a case of gonorrhœal conjunctivitis? [8]

2. Describe an attack of acute iritis. [8]

3. What do you understand by the terms—'hypermetropia' 'myopia', 'astigmatism'? [9]

FINAL M.B. AND B.S. DEGREE EXAMINATION, 1938.

FORENSIC MEDICINE.

Monday, 11th April—10 a.m. to 1 p.m.

PART I.

1. Describe the forms of documentary evidence; how they should be presented in court and when they are accepted. [16]

2. Mention the data on which the identity of a person could be established, and discuss the value of each as proof of identity. [18]

3. Describe the symptoms and treatment of datura poisoning. How is datura administered? [16]

PART II.

1. How would you determine the approximate time of death from the post-mortem appearances of a body ? What are the factors that influence such estimation ? [16]

2. What post-mortem signs are to be found in a case of drowning ? How would you determine that drowning was homicidal ? [18]

3. Compare and contrast the appearances of antemortem and post-mortem wounds. How would you determine the age of a wound ? [16]

MEDICINE.

Monday, 11*th April*—2 *to* 5 *p.m.*

PART I.

1. Discuss the ætiology, pathology, and symptomatology of hypertrophic emphysema. [18]

2. Discuss the ætiology and treatment of hiccough. [15]

3. Give the differential diagnosis of dysentery. [17]

PART II.

1. Chronic interstitial nephritis—give the ætiology, and briefly describe the pathology. What are the indications for treatment, and how would you meet them ? [18]

2. Describe the course and distribution of the pneumogastric nerve (vagus). Mention the symptoms that may arise when this nerve is involved in disease. [15]

3. Discuss the value of the "fractional test meal" in investigation of disease. [17]

SURGERY.

Tuesday, 12*th April*—10 *a.m. to* 1 *p.m.*

PART I.

1. Give the causes and describe the clinical features and treatment of torsion of the spermatic cord. [16]

2. Where are diverticula found in the gut ? How would you investigate a case suspected to be suffering from diverticulitis, and how would you treat it ? [17]

3. A case of compound comminuted fracture of both bones of the leg is admitted in your ward. How would you treat such a case ? Under what conditions would you decide to amputate ?

What factors would have a bearing on the prognosis ? [17]

PART II.

1. Describe briefly the ætiology, symptoms, and signs of acute empyema thoracis. How would you treat the condition ? [16]

2. Discuss the pathology and treatment of congenital talipes equinovarus. [17]

3. Discuss the ætiology and treatment of pyelitis. [17]

OBSTETRICS AND GYNÆCOLOGY.

Tuesday, 12*th April*—2 *to* 5 *p.m.*

PART I.

1. Describe the treatment prophylactic and curative, of puerperal infection. [16]

2. You are called in to see a woman in labour. The midwife reports that the umbilical cord is prolapsed. Describe the investigations you would make, and discuss the treatment and prognosis of the case. [17]

3. Describe the ætiology, pathology, and clinical features of carcinoma of the body of the uterus. Discuss the prognosis and treatment. [17]

PART II.

1. Discuss the causes of abortion. How would you treat a case of abortion during the first three months of pregnancy ? [18]

2. What are the causes of diarrhœa in a new-born infant ? How would you treat it ? [16]

3. Give the causes, pathology, and treatment of erosion of the uterine cervix. [16]

M.D. DEGREE EXAMINATION, 1938.

(PAPER COMMON TO ALL BRANCHES).

MEDICINE (GENERAL).

Monday, 4*th April*—10 *a.m. to* 1 *p.m.*

[N.B.—All the questions to be answered.]

I. Discuss the differential diagnosis of faucial diphtheria and the common complications of the disease.

II. Give an account of the symptomatology and treatment of sprue.

III. Describe the ætiology, symptoms, diagnosis and treatment of bronchiectasis.

IV. What are the clinical findings in a case of Bell's paralysis? How would you treat the condition?

BRANCH I.

MEDICINE, INCLUDING MENTAL DISEASES AND PATHOLOGY I.

Tuesday, 5th April—10 *a.m to* 1 *p.m.*

[N.B.—All the questions to be answered.]

I. Renal Sclerosis. Give the ætiology, pathology and symptoms. Discuss the diagnosis and prognosis.

II. What do you know of the therapeutic uses of arsenicals? Mention the diseases in which these are used, giving the appropriate preparation in each case with details of mode of employment.

III. Discuss the classification of viruses that ordinarily affect man and give in detail the pathology and symptomatology of one disease, as an example of each class or group.

MEDICINE, INCLUDING MENTAL DISEASES AND PATHOLOGY II.

Wednesday, 6th April—10 *a.m. to* 1 *p.m.*

[N.B.—All the questions to be answered.]

I. Describe the clinical manifestations of congenital syphilis at different ages.

II. A man aged forty years has suffered from jaundice for three months. How would you proceed to establish the cause?

III. Give a critical survey of the theories of causation of neurosis, psychoneurosis and psychosis advanced by the psycho analytical schools of psychiatrists.

BRANCH II.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN INCLUDING PATHOLOGY I.

Tuesday, 5th April—10 *a.m. to* 1 *p.m.*

I. Give an account of the development of the vagina, describing the developmental anomalies of the same. Indicate briefly the lines of treatment you suggest for each anomaly. [25]

II. Discuss in detail the management of a case of Pelvic Disproportion :—

(*a*) When seen before labour.

(*b*) When seen after the onset of labour. [25]

III. Describe the pathology of a Granuloma Cell Tumour of the Ovary. Mention the clinical features of a case with such a tumour and indicate the lines of treatment. [25]

IV. Discuss the pathology, diagnosis and treatment of abdominal Pregnancy. [25]

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN INCLUDING PATHOLOGY II.

Wednesday, 6th April—10 *a.m. to* 1 *p.m.*

I. Describe the causation of Intracranial Hæmorrhages in the newborn :—

(*a*) in head presentations.

(*b*) in breech presentations. [25]

II. Give a lucid account of the effect of abnormal uterine action on the progress of labour and discuss the treatment. [25]

III. Mrs. X aged 30 years, conceived five times in her ten years of married life, but has no child. How would you investigate her case? Discuss the treatment. [25]

IV. Discuss the pathology, diagnosis and treatment of Gonorrhœa in a married woman [25]

SURGERY—PAPER I.

Monday, 4th April—10 *a.m. to* 1 *p.m.*

I. Discuss the pathology, diagnosis and treatment of malignant tumours of the Thyroid Gland.

II. Discuss the methods available for the diagnosis and localisation of intracranial neoplasms. Discuss briefly the pathology and prognosis.

III. Discuss the indications for surgery in the treatment of cardiac affections.

IV. Discuss the ætiology, pathology and treatment of renal calculus.

SURGERY—PAPER II.

Tuesday, 5th April—10 *a.m. to* 1 *p.m.*

I. Write an essay on 'fractures of the neck of the humerus, including fracture-dislocation of the shoulder.'

II. Discuss the value of pyelography in urinary surgery.

III. Describe the surgical anatomy of the great sciatic nerve.

SURGICAL ANATOMY AND PATHOLOGY—PAPER III.

Wednesday, 6th April—10 *a.m. to* 1 *p.m.*

I. Discuss the nature of the local fault in Raynund's disease and the differential diagnosis.

How would you investigate such a case, with a view to treatment?

Describe in anatomical detail an operation for the treatment of the condition.

II. A youth of about 20 years, is admitted in your charge, complaining of a painful swelling in the scrotum.

How would you investigate the condition clinically, and given the post-operative specimen, upon what pathological features would you base your differential diagnosis?

Describe in detail the operation of orchidectomy.

III. Discuss the chief pathological features and the treatment of post-traumatic osteodystrophy.

MIDWIFERY—PAPER I.

Monday, 11th April—10 *a.m. to* 1 *p.m.*

I. What is a Pelvic Abscess? Discuss the ætiology, diagnosis and treatment. [25]

II. A Primipara aged thirty is admitted in labour with the head unfixed.

Describe in detail the method of investigation, and discuss fully the treatment of such a case. [25]

III. A new-born infant on the fourth day after birth has Hæmatemesis and Malæna. Discuss the treatment. [25]

IV. Discuss the modern view of the ætiology, diagnosis and treatment of Puerperal Septiæmia. [25]

BRANCH II.

SUBJECT FOR ESSAY.

Thursday, 7th April—10 *a.m. to* 1 *p.m.*

[N.B.—Marks will be given for the method of presentation of the subject as well as for the actual subject-matter.]

Backache in women.

or

Methods of Analgesia and Anæsthesia in obstetrics.

EXAMINATION FOR THE DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS, 1938.

GYNÆCOLOGY AND DISEASES OF A NEW BORN CHILD—PAPER II.

Tuesday, 12th April—10 *a.m. to* 1 *p.m.*

I. Describe the musculature of the Pelvic Floor. Describe an operation for secondary repair of a complete tear of the Perineum. [25]

II. A married, parous woman aged thirty-five has been suffering from irregular vaginal hæmorrhage for some six months. Discuss the diagnosis and indicate the lines of treatment. [25]

III. Describe the ætiology and pathology of vesico-vaginal fistulæ. Describe your treatment of a case in detail. [25]

IV. Write a short note on the preventive aspect of Ante-natal care in relation to maternal mortality and morbidity. [25]

B.S.Sc. DEGREE EXAMINATION, 1938.

CHEMISTRY AND PHYSICS IN RELATION TO PUBLIC HEALTH: CLIMATALOGY AND METEOROLOGY—PAPER I.

Monday, 10th January—10 *a.m. to* 1 *p.m.*

PART I.

I. Give a short account of the monsoons prevalent in India. State how they are caused and how they influence public health. [16]

II. Write descriptive notes on the following and state their utility :—

(*a*) Butyro Refractometer.

(*b*) Anroid Barometer.

(*c*) Richmond's Scale. [18]

III. What are the usual adulterants of ghee?

What characteristics differentiate ghee from foreign fats?

How would you determine the percentage of ghee in an adulterated sample? [16]

PART II.

I. How is hardness of water caused? Outline the methods used for the softening of waters and describe briefly the chemical changes involved. [16]

II. What is meant by "Carbolic co-efficient"? Enumerate the chemical disinfectants in common use discussing their limitations in practical disinfection. [16]

III. Write short notes on :—

(*a*) Vitamin D.

(*b*) Self-purification of streams.

(*c*) Chronic lead poisoning. [18]

BACTERIOLOGY.

Monday, 10th January—2 *to* 5 *p.m.*

PART I.

I. Give a short description of the methods you would adopt to examine milk bacteriologically. What pathogenic organisms are likely to be present and how would you demonstrate their presence? [25]

II. Give an account of the cultural methods available for the cultivation of tubercle bacilli. How would you differentiate the bovine strain from the human? [25]

PART II.

I. State the laboratory procedure you would adopt in an investigation of an epidemic of cholera in a boarding school. How would you recognise a pure culture of the organism? [17]

II. What are Antibacterial and Antitoxic Sera? Discuss the mode of action of each. [16]

III. Mention the various strains of spironema of Relapsing Fever giving the geographical distribution and the insect victor in each case. Give the life history of any one of the spironema. [17]

MEDICAL ENTOMOLOGY AND PARASITOLOGY.

Tuesday, 11th January—10 *a.m. to* 12 *noon.*

PART I.

I. Name the schistosomes that are found parasite in man. Describe their ova and the characteristic external features of this class of parasites. [25]

II. Give an account of entamœba hystolitica under the following heads:—

Structure, life history and carriers. [25]

PART II.

I. What cestode worms are found parasitic in man? Give a full account of the life history of any one of them. [25]

II. Give the life history of Pediculus and mention the diseases it transmits. [25]

Smile a While.

A man with two hearts has been discovered. We wish they could use him in the banking business.

* * *

We believed the doctors without a question when they told us that cold feet were due to poor circulation, but it took a bank holiday to convince us that poor circulation was due to cold feet.

* * *

Doctors have discovered a man in New York who feels no pain when jabbed with needles, pins, or other sharp instruments. Ah! The ideal taxpayer.

* * *

Violent exercise after forty is harmful especially if you do it with a knife and fork.

A nerve specialist says that, when he is confident that he has cured a patient, he gives him a shock in order to prove the success of the treatment. He just hands him the bill, we presume.

* * *

Baby Tonic Wanted.

A young bride walked into a drug store and approached a clerk timidly.

"That baby tonic you advertise—" she began, "does it really make babies bigger and stronger?"

"We sell lots of it," replied the druggist, " and we've never had a complaint."

"Well, I'll take a bottle," said the bride after a moment and went out. In five minutes she was back. She got the druggist into a corner and whispered into his ear; "I forgot to ask about this baby tonic," she said under her breath, "Who takes it—me or my husband?"

* * *

Non-Transferable.

Teacher: "Tommy, come up here and give me what you've got in your mouth."

Tommy: "I wish I could—it's the toothache."

* * *

Magic Discovery.

Jack: "This liniment makes my arm smart."

Joan: "Why not rub some on your head?"

* * *

Discussion about Bank Crashes.

Dr. A.: How much did you lose.

Dr. B.: Sixty thousand.

Dr. A.: I am sorry for you.

Dr. B.: But the Bank Director is my patient!

* * *

Squad Number!

It seems unless there are at least fifteen members the bus for the lady students' won't take a trip. The driver, we presume, numbers them before each trip!

* * *

Something!

A Hair oil is advertised: "Removes dandruff. Promotes luxuriant growth. Restores grey hair!"

University of Madras.

MEDICAL EXAMINATIONS, APRIL 1938.

The following is the list of successful candidates at the recent Medical Examinations held in April 1938:—

[*Note.*—Names in *italics* denote women candidates.]

MEDICAL COLLEGE, MADRAS.

PRE-REGISTRATION EXAMINATION.

SECOND CLASS.

Rank.	Register number.	Name of candidate.	Rank.	Register number.	Name of candidate.
1	4	Arumugham, A. G.		24	*Girija Bai, C. S.*
2	23	Garson, B. E. G.		27	Jagannathan, K.
3	22	Ganu Rao, P.		28	Jeremiah, D. E.
4	35	Mohana Rao, K.		29	Kennedy, P. J.
5	34	Marshall, J. T.		30	Kothari, Ananthalal, B.
6	10	Bhaskaran, T. S.		31	Krishnan Nambisan, M.
7	43	Radhakrishna Rao, P. V.		33	Mahboobuddin Sahib Siddiq
	1	Abdul Aziz, T.		36	Mohd. Ubedullah.
	3	Appa Rao, J.		38	Narayana, B. V. L.
	5	Arunagiri, A. J.		39	Narayanan, R.
	6	Babu, P. S.		40	Narayanan, S.
	7	Baker, R. I.		41	Oakley, G. C.
	9	Bhaskaran, K.		42	Osman, Sheriff, M.
	11	*Bunyan, Deevana, D.*		45	Ramaswami, K. R.
	12	Corbitt, R. S.		46	*Sawar Begum.*
	13	Dakshinamurthi, N.		47	Satyanarayana, C.
	17	David, S. S.		48	Sitharama Chetti, Y.
	19	D'Lanoy Carvalho, B.		51	Subrahmanyan, S. V.
	20	D'Souza, R.		53	Venkataramana Rao, K.
	21	Gangadharan, N.			

FIRST M. B. & B. S. EXAMINATION.

Part I.

Register number and name of candidate.

54 Arumugam, A.
56 *Balraj Dorothy.*
58 Chakrabani, V.G.
59 Dayananda Shetty, A.
60 *Dias, D.*
61 D'Netto Edgar Jaseph.
63 *Ethirajam, T. R.*
65 Gopalaswami Chetti, S.
66 Govindarajulu, N.
67 *Humara Begum.*
68 Jayaram, T. K.
70 Kothandapani, C.
7 Krishna Rao, K. V.
72 Krishna Reddi, M. V.
73 Krishnaswami, G.
74 Krishnaswami Reddiyar, V.
75 Kunjan, K. R.
76 Kuppuswami, E L.
77 Lilakrishnan, A. G.
78 Mallayaswami, R.
79 Mohanarangam, P.
80 Muhammad, V. B.
81 Narasimha Reddi, D.
82 Narayanankutti, P.
83 Padmanabha Rao, N.
85 Parthasarathi Naidu, V.
87 Ramachandran, P. S.
88 Rangaswami, V.
90 Saldanha, F. A.
91 Seena, V.
93 Shidikhi Mahmood Kalilur Rahman, C.
94 Soundararajulu, T. N.
96 Sundarsan Lal, S. K.
97 Swaminathan, M.
100 Umamaheswara Rao, K.
101 Vadivelu, C.
103 Venkateswara Rao, P.
104 Victor Selvaraj.
105 *Welsh, Hazel.*

The following candidates completed the First M.B. & B.S. Examination by passing in Part II:—

SECOND CLASS.

Rank	Register number.	Name of candidate.	Rank.	Register number.	Name of candidate.
1	133	Girdhar Prabhu, G.	25	177	*Saraswathi, D.*
2	158	Muthurangam, T. R.		117	Ahmed Hussain, H.
3	119	Anantagiri, V.		121	Babu, A. P.
4	164	Raghavan, A.		126	Chandrasekhara Reddi, P.
5	140	Iswaran, N. K.		130	*D'Sylva, Louisa.*
6	178	Shengotayyan, K. N.		138	Harirajan, D.
7	162	*Pankajam, V*		139	*Issac, Kamala Bai*
8	125	Chandrasekharan, N.		143	Kalayanasundaram, P. V.
9	166	Rajasekharan, N.		150	Kunhi Muhammad, N.M.
10	124	*Burhanunissa.*		152	*Leelvthi, B.M.*
11	172	Rangaraj, A G.		153	Madhavan. S. P.
	173	Sanjiva Rao, K,		154	Mohnnan, T.
13	157	Muthukumaraswami, M.		156	Muhammad Yusuf Khan.
14	142	Jayaraj Ayyanadar, C.		163	Radhakrishnan, P. V.
15	108	Ganapathi, S N.		170	Ramakrishnan, A. S.
	149	Kumaravelu, P. S.		174	Sankarankutti Menon, P.
17	129	David, G. H. S.		176	*Sarah Samuels.*
18	160	Noble Adiseshiah.		178	Subramanyan, G. K.
19	120	Aravanda Babu, S. R.		185	Vedanayagam, D. T.
20	187	Vargheese, P. F.		186	Venkataswami, T. J.
21	112	Rama Rao, S.		190	Vittal Rao, C. R.
	147	Krishnan, S.		192	White, E. R.
23	136	Gopalaratnam, M. R.			
	151	Lakshmirayudu, C.H.			

SECOND M.B. & B.S. EXAMINATION.

Part I.

Register number and name of candidate.

193 *Arogyadas Shanta.*
194 Arpudaraj, S. T.
195 Balasubrahmaniyan, O. S.
196 Bhaskara Varma, K. R.
197 Chandrasekharan, C. R.
198 Chennabasappa, M.N.
201 Ganapathi, S.
202 Gopalakrishna Ayyar, S.
204 Jagannatha Reddi, D.
206 Jayaram, D.
207 *Kamalavalli, B.*
208 Krishnamurti, S.
209 Krishnan, M.
210 Krishnaswami, N.
212 Lionel Sylvester.
214 Madhava Rao, R.
215 Madhava Rao, T.
216 Marakothavel. S.
217 Mathew, K. N.
218 Minakshisundaram, K.
220 Muhammad Taj-ud-din.
221 Mummurthi, C.
222 Muttukrishnan, C.
223 Narayanan, P. K.
224 O'Neil, E. P.
225 Pereira, B. J.
226 Prabhakaran, K.
227 Radhanakrishna Chett., M.
229 *Samuel Annamma, M.*
230 Sankaran, S.
232 Shamboo Hedge, M.
234 Sivaramakrishnan, K,
235 Somayya, C. I.
236 Srinivasan, N. A.
237 Subbaramayya, J.
238 Subramanyam, C. P.
239 Sundaram, P. V.
240 *Swarnambal, S V.*
241 Thamaratnam, P.
242 Umamaheswara Rao, P.
243 Velayudhan Pillai, K.
244 Venkataramanan, G. N.
245 Venkataranga Rao, B.
246 Vijayaraghavan, C.

The following candidates completed the Second M.B. & B.S. Examination by passing in Part II:—

FIRST CLASS

Register number.	Name of candidate.
320	Sadekar, V. S.

SECOND CLASS.

Rank.	Register number.	Name of candidate.	Rank.	Register number.	Name of candidate.
1	292	Narayanan, G.	33	276	Joseph, K. P.
2	280	Kesava Pillai, E. K.	34	299	Pattabhiramaswami Reddi, A.
3	319	Samual Victor, J.			
4	314	Ranganatha Pillai, T. V.	35	285	Krishna Rao, S.
5	333	Uddanwadiker, V. B.	36	259	*Asirvadhum Josephine.*
	338	*Vaithilingam Kamala, I.*	37	328	Suryaprakasa Rao, J.
7	340	Yusuf Siddique.	38	255	*Afzalunnisa Begum.*
8	334	*Vedakam Daisy.*	39	281	Korula John.
9	305	Raja Rao, S. V.		257	Antony, P. K.
10	275	Jayaram Rao. D.		263	Chandrasekhara Panikar, T. G.
11	252	Radha Muhan Nigam.			
12	247	*Kamalakshi Ammal, K.*		267	Dorairaj, T.
	327	*Sunanda Bai, K.*		271	Ganesh Mudaliyar, V. B.
14	326	Sukumaron, R.		272	Gopala Menon, K.
15	264	*Chandy Saramma.*		277	Joseph, M. P.
16	304	Rajagopal, S. G.		286	*Krishnaswami Vasntha, S.*
17	257	Ananthan, K. P.		288	Marthandam, L. R.
	260	Atmaram Rao, G.		303	Raghunandana, G.
19	287	*Mahalakshmi, S.*		306	Raju, W. S.
	289	Martin Basil, H.		307	Ramakrishnan, K.
	321	Somasundaram, M.		309	Ramamurti, V.
22	312	Rama Raju, P.		313	Ramaswami, C
23	238	*Inoch Jasemine.*		317	Sam Johnson, Y.
24	282	Koshy, P.		322	Sridharam, N. V.
25	265	Davidson, H. A.		325	Subbaratnam, G. L.
26	310	Ramanujachari, C.		329	Thomas Kuruvilla, T.
27	258	Arthur, D.		331	Thiruvengadam, C. R.
	318	Sampath, S K.		332	Udayavarma Raja, K. C.
	266	*Dominic Josephine.*		336	Viswanatha Rao, S.
29	295	Orten, S. G.		339	*Walter Alice, M.*
	302	Raghavan, T.			
	316	*Saguna Bai, M.*			

FINAL M.B. & B.S. DEGREE EXAMINATION.

Part I.

Register number and name of candidate

341 Anantaraman, L. N.
342 Arumainayagam, C.
343 Arunachalam, R.
344 Bhadrayya, C.
345 Cadogan, A. J.
347 Ittupuni, P. C.
348 Jacob, P. L.
349 Krishnamurti, M. V.
350 Krishna Subrahmanyam, Y.
351 Krishnaswami, A. K.
352 Mohanarangam, C.
353 Muhammad Takli Kaleeli.
354 Muhammad Yusuf Khan.
355 *Mukunda Menon Kamalam.*
356 Narayanan, T. K.
357 Padmanabha Ayyar, R.
358 Paul, P. A.
359 Rama Ayyangar, M. C.
360 Ramachandra Reddi, P. V.
361 Ramamurti, D. V.
362 Sankaran, S.
363 Saodekar, V. S.
364 Sattur, F. J.
365 Sridara Nambiyar, A. C.

FINAL M.B. & B.S. DECREE EXAMINATION—*cont.*

Part I—*contd.*

Register number and name of candidate.

366 Srinivasaraghavan, N. G.
367 Subrahmanyan, N.
368 Subrahmanyan, P.
369 Toomey, D. J.
370 Uddanwadikar, V. B.
371 *Varghese Mary, K.*
372 Viswanatha Ayyar, P. S.
373 Vittal Rao, C. R.
374 Balakrishna Menon, K.
375 *Balraj Devakrubai.*
376 Coshan, A. R.
378 Gangadhara Kartha, N.
379 *Gomez Mavis.*
380 Ipe, C. P.
382 Mathew, K. M.
383 Muhammed Jehangir.
384 Muhammad Shamshuddin.
386 Raghava Rao. T. V.
387 Raman P.
388 Sankara Pillay, K. N.
389 Sriramachandra Rao, C.
390 Sundaramrami Reddi, G.
391 Venkata Rao, K.
392 Waller, S. O.

The following candidates qualified for the M.B. & B.S. Degree:—

SECOND CLASS

Rank.	Register number.	Name of candidate.	Rank.	Register number.	Name of candidate.
1	439	Mahava Rao, D.N.		447	*Muthulakshmi, P. S.*
2	484	Satya Joseph, H. A.		448	Narasimhachari, N.
3	426	Kapur, G. O.		449	Narasimhachari. R.
	493	Srinivasan, A.		452	*Padmavati, I. K.*
5	469	Ramanathan, A. N.		458	Porinchu, A. A.
6	417	Gumastha, S. P.		459	Raghavan, E.
7	504	Saiyed Muhammad Anif.		462	Rajagopalan, V.
8	491	Sivarama Kini, U.		463	*Rajamma, B.N.*
9	489	Sivarajan, S		465	Ramachandara Sastri, P.
10	441	Maruthi Rao, U.		467	Ramakrishna Rao, K.
11	454	Paise, C. F.		475	Rangachari, N. A.
	398	Antony, C. J.		476	Rangavadivelu, N.
	400	Avudiappan, T. S.		477	Robello, E. R. F.
	401	Balakrishna, V.		481	Samuel, G.
	402	Balakrishna Kini, M.		485	Seshappa Shenoy, L.
	403	Balakrishnan, S.		486	Sitharaman, N.
	405	Chandrasekhara Ayyar, G. V.		487	Sivabushanam, K.
				488	Sivanandam, T. V.
	409	David, C. J.		494	Srinivasan, P. C.
	410	Dominic Sebastian, K.		495	Srinivasa Rao, B.
	412	Francis, O.		497	Subbarayulu, P.
	424	Joseph, C.		500	Subrahmanyan, R.
	427	Kerney, P. L.		501	Sudarsanam, V. C.
	429	Kesavan, C. K.		502	*Sumitra, K.*
	436	Lakshminarayanan, P. R.		515	Varma, S. N.
	437	Luke, V.		516	Viswanathan, G.
	443	Miran Ravuthar, K. M.			

M. D. DEGREE EXAMINATION, APRIL 1938.

The following candidate was declared to have qualified for the M. D. Degree:—

Branch II—*Midwifery.*

Register number.	Name of candidate.
522	Krishna Menon, M. K.

M. S. DEGREE EXAMINATION, APRIL 1938

The following candidate was declared to have qualified for the M. S. Degree :—

Register number.	Name of candidate.
529	Subrahmanya Ayyar, *D.*

EXAMINATION FOR THE DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS, APRIL 1938.

(Diploma Gynaecology Obstetrics.)

The following candidate was declared to have passed examination :—

Register number.	Name of candidate.
531	*Mahadevan Sumati.*

Printed at MESSRS. GORDON & CO., LTD. (Gordon Press), 768-770, Triplicane High Road, Madr
by the Managing Director, R. Ravaimanickam. Published by Mr. T. K. Narayan, General Secret
Madras Medical College Association.