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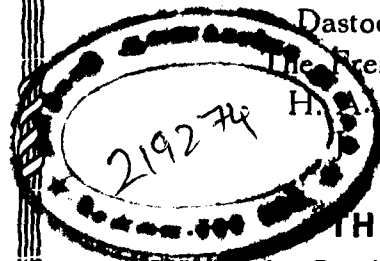
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Lt. Col. F. F. ELWES, M. D., C. I. E., I. M. S.
(By Courtesy of "The Madras Mail")

Medical Education in Bombay

(BY A MEDICAL GRADUATE OF BOMBAY)

UP to June 1925 the Bombay University had only one Medical College. During the last 20 years this College used to admit 150 to 175 fresh students every year. With the available facilities, equipment, teaching staff, clinical material and laboratories, this was too big a number to receive adequate training in medical science. The new lot included students from Peshawar to Madras and from Calcutta to Karachi. The number of students seeking admission was increasing every year and hence about five years ago when the Dean of the College notified to take only a limited number and when a good many students were refused admission, there was a loud cry in the Press from the public who, instead of taking the action of the Dean in its proper light, resented it saying that such an action was high-handed and he ought to admit everybody, and if the Government thought that the Dean had acted rightly they ought to have provided another Medical College before taking any such action. Thereupon the Government asked the Medical authorities to prepare a scheme to convert the Medical School at Poona into a Medical College and to prepare an estimate of the cost. When the Medical authorities informed the Government that it would cost 30 lakhs of rupees to convert the School into an up-to-date and properly equipped College the scheme was postponed on

financial grounds. But to tide over the difficulty the Government found some other ways *viz.*, to provide facilities for clinical teaching in Hospitals which never allowed any students before. But the main problems still remained to be solved.

The Medical men of Bombay had realised from a long time that the medical education which they received in Bombay, though good, was not sufficient and unless they went to Europe and worked or studied in Hospitals there, their education was not perfect. Besides to compete in private practice with the better placed and better trained I. M. S. Officers it was highly essential that the Indians should not only go to Europe for further studies, but must obtain high English qualifications. Here, though a little out of place, I may mention that some had their own means while the others being poor were helped by philanthropic gentlemen who provided the necessary funds either as a loan or a gift. It was Dr. Bahadurji who was the first man to lead this movement. When he returned to India after obtaining M. D. (London) and when he started practice, his success was so great and so rapid that many more followed in his footsteps and today Bombay can claim dozens of highly qualified and efficient Indian medical men, almost all of whom had their initial training in Bombay and then proceeded to England where, after studying for a period of two to five years and obtaining a diploma or a degree, they had held house appointments. Their experience in England had, among other things, taught them that any medical graduate before commencing his professional career, to gain practical experience, must hold some house appointment and to keep in touch with the science, he must try to hold an appointment as a physician or a surgeon on the staff of any hospital or hospitals. But in those days all the Hospitals were Government Institutions and they were staffed by Government servants only. Hence the Indian general practitioner, if he had means of his own or if he had the financial support of some philanthropic gentleman, opened a small Hospital of his own. But in all fairness to the authorities at Sir J. J. Hospital—the big Government Hospital—

I must say that they had not shut their doors entirely. More than 20 years ago, two posts, one for an Hon. Surgeon and one for an Hon. Physician for a period of two years were made open to general practitioners, and though the facilities afforded to these Hon. staff were meagre, there was a keen demand for them. Three other Honorary appointments *viz.*, Dermatology, Dentistry and Ear-nose-and-throat were also held by independent practitioners. Also in the Medical College every professor had two or three assistants who were newly qualified doctors and who were called Tutors or Demonstrators. They held these appointments for five years and were paid an honorarium of about Rs. 100 per month. Thus a fresh graduate while starting his practice in the city held a tutorial appointment at the College. In the Hospital the Surgeons and Physicians had no assistant Surgeons to help them but from the newly qualified men a House Surgeon or a House Physician was appointed every year. He was paid Rs. 50 per month.

Every year, as the number of highly qualified doctors began to increase, the question of finding Hospital appointments for them became more pressing. As I said above some founded their own institutions. Dr. Masina, an eminent and one of the leading Surgeons in Bombay, at first opened a small Hospital of his own. He did such excellent work that he soon began to get financial help from other people and now he possesses a well equipped modern Hospital. Mr. Petit gave a very large sum—about 30 lakhs—to build a Parsi General Hospital for the Parsis and it has an Honorary staff of Parsi doctors. The Bombay Municipality maintained two Hospitals, one for plague and one for Infectious Diseases; the total number of beds in both were about 400. Lately they have built a new Hospital of their own which contains about 300 beds. The staff is paid by the Municipality. About three years ago a few independent practitioners collected some subscription from the public and to that they themselves added a certain amount and opened a small Hospital, called People's Hospital. It has got about 40 beds, but the staff is all Honorary and the work done by them is very good.

But the real solution of the problem was either the Government should throw open more appointments for the General practitioners, or the public should build their own Hospitals in which these doctors should hold all the appointments. As regards the first course, people were not very hopeful. Still, above 17 years ago the Government appointed Late Dr. Surveyor as the first professor of Bacteriology. Thus a beginning was made from among the independent practitioners. Then followed Anatomy, Biology, Materia Medica and Pathology, and by about 1923 all the posts except six in the Grant Medical College were held by non-I. M. S. men. The Honorary posts for Surgeons and Physicians were increased from one to five. In Goculdas Tejpal Hospital the Superintendship was given to a non-I. M. S. man and surgical and medical units consisting of independent practitioners were introduced.

About 17 years ago the late Sir Harkisandas gave a sum of about five lakhs of rupees to build a Hindu General Hospital. Owing to various causes his object was not achieved during his life time. After his death the Trustees also found some difficulty to build the Hospital. The prices of materials were high and the funds were inadequate for the purpose. The Trustees did their best and, by contribution from other people plus the interest, they managed to collect enough funds and have this year opened a fine Hospital in the centre of the city. The Hospital contains 40 beds with a fine operation theatre and has an honorary staff of physicians and surgeons, and, if required, the number of beds can be increased.

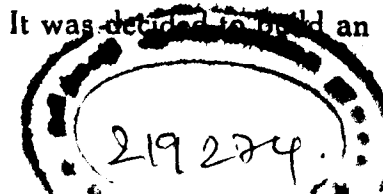
In 1907 under the Police Charges Act, the Corporation of Bombay was given the work of Medical relief. It appointed a committee, called the Medical Relief Committee, to consider how medical relief could be extended to the poor or more populated localities. In 1909 the committee proposed to build a Hospital in the Northern part of the city. After the death of His Late Imperial Majesty King Edward VII a committee was formed by the people of Bombay to raise funds and to build a suitable memorial. This memorial committee decided to apply

their funds to build a Hospital, to be called King Edward Memorial Hospital. They collected about $5\frac{1}{2}$ lakhs of rupees and they calculated that, by the time the scheme was carried into effect, this sum with interest would be $5\frac{3}{4}$ lakhs. The Government granted a free site measuring 50,000 square yards on the Parel Government House Estate. The market value then of this site was about four lakhs of rupees. The memorial committee asked the Corporation whether they would contribute anything to this fund, so that a properly equipped Hospital containing accommodation for 220 patients could be built and also whether the Corporation would undertake to maintain that Hospital in future. As the Corporation were considering to build a Hospital of their own, they welcomed this gift and replied that they would build a Hospital and that they would equip and maintain it.

The memorial committee asked the Executive Engineer and the Executive Health Officer to prepare plans and estimates amounting to 21 lakhs of rupees. These plans were forwarded to the Corporation. The memorial committee and the Corporation Medical relief committee met together and decided upon certain proposals. They decided to leave the management in the hands of the Municipality and sent their proposals to the Corporation for approval. They suggested that an Advisory Board with persons outside the Corporation and qualified to advise, be formed, and that the plans should be submitted to some expert authority in designing Hospitals.

The Secretaries of the Sir Currimbhoy Ebrahim Entertainment Fund proposed to give a sum of about Rs. 1,20,000 on condition that a block or one of the wards of the Hospital should be named after the donor.

Dr. Rajabali Patel gave a sum of Rs. 50,000 from the estate of the late Dr. Habib Jan Mahamed on condition that either a Maternity ward or an operation theatre should be built and named after the deceased, and that it should be efficiently maintained and be always in charge of a competent Indian of distinction in the medical profession. It was decided to build an



operation theatre in the name of Dr. Jan Mahamed as Mr. Purushottamdas Mangaldas offered a sum to build a maternity ward to be named after his wife Lilavatibai. The Lalcaca memorial funds sent 17,000 rupees to build a dispensary and to name it after the late Dr Lalcaca.

At this time Government who were thinking of establishing a school of Tropical Medicine in conjunction with the Government Bacteriological Laboratory at Parel and the proposed King Edward Memorial Hospital, offered to pay the cost of building the school, to present a valuable site and help towards making up the balance of funds required for building the Hospital. The offer of the Government was accepted by the Corporation in October 1914.

The balance of the fund raised to celebrate the visit to India of His Imperial Majesty King George V was handed over to the Corporation to reserve beds for Tuberculosis patients in King Edward Memorial Hospital.

At this time, at the instance of the Trustees of Seth Gordhandas Sunderdas, the Hon. Advocate General offered to the Corporation a magnificent sum of 12 lakhs of rupees for endowing a Medical College in connection with the King Edward Memorial Hospital. The offer was made on the following conditions.

I. That a Medical College should be established in connection with and be attached to King Edward Memorial Hospital.

II. That the Corporation should provide the necessary buildings and equip the College with all necessaries to impart proper Medical Education up to the highest medical degree of the University of Bombay.

III. That the Corporation should defray all the expenses to maintain the College efficiently.

VI. That the Professors and teachers to be employed at the College should be properly qualified Independent Indian Medical men, not in Government service

V. That the College should be affiliated to the University of Bombay,

VI. That the College should be named "Seth Gordhandas Sunderdas Medical College."

As said above, the Government Medical College was overcrowded and though the Government had found some ways to tide over the difficulty, the main problem had remained unsolved. There was a great need for a second Medical College. The Corporation accepted this munificent offer and formed a committee to proceed with the scheme.

The plans for constructing the King Edward Memorial Hospital were at first submitted to an architect in England, but as the College was added later on, the plans were recast. As the original site for Hospital given free by the Government was not enough to build a College and for future expansion, some more land was purchased at a reasonable price from the Government. The total cost of the Hospital was estimated at Rs 25,28,000 and that of the College at Rs. 13,64, 500. The Corporation was informed that the total charges for design and construction would be $7\frac{1}{2}$ p. c. on the estimate, but if the Corporation left it to the Government, they would pay $2\frac{1}{2}\%$ on the estimate towards design and construction (the design being subject to approval by the Corporation). Thus the Government gave further aid besides four lakhs originally promised and a grant of site for the Hospital; so the work of building the Hospital was left to the Government. For the College, the Government did not give any help; so the Corporation gave the building work to a private Company. In 1923 when the works were nearing completion a Committee of four Doctors (including 2 I. M. S. and 2 Non I.M.S. men) was appointed to give advice on the organisation of the Hospital. This Committee submitted its report which was adopt-

ed by the Corporation. The Corporation also resolved that the medical staff in the King Edward Memorial Hospital should consist of properly qualified independent Indians not in Government service.

The works are almost complete but they have cost more than the original estimates.

The College is a fine three storied building with possibility for future extension. It has got a hostel to accommodate 150 students.

The hospital is designed on the modern pavilion system. A straight corridor runs from north to south with various buildings branching off at right angles. The Hospital, besides providing for Medical and Surgical cases, has got Maternity, Ophthalmic, Isolation and Casualty wards. The Nurses' quarters provide accommodation for two lady Doctors, one Matron and 50 Nurses. There are bungalows for R. M. O., Stewards and Engineers and quarters for Compounders and servants and a Laundry.

The Out Patient department has special departments of Otolaryngology, Rhinology, Dentistry etc. A large X-Ray and Electro-Therapeutic department is also provided. The staff consists of:—

6 Physicians, 6 Surgeons, 3 Obstetric Surgeons, 2 for Ophthalmology, one for Hygiene, one for Toxicology and Medical Jurisprudence, one for Anaesthetics, one for Ear-Nose-Throat, two for Dentistry, one for Radiology, one for Dermatology and Venereology. The above are honorary staff. About 80% of these are qualified in England, the Physicians and Surgeons are holding the highest English qualifications. All members of the Honorary Staff are paid Rs. 150 per month as conveyance allowance.

The full time staff are:—

- One for Physiology.
- One for Anatomy.
- One for Pathology and Bacteriology.
- One for Pharmacology.

All these are paid Rs. 700—50—1200. But the Professor of Pathology, as a special case, gets Rs. 1200 per month, and the Professor of Anatomy gets Rs. 900.

Besides the above there are four associate professors. Their subjects are:

1. Physiology and Bio Chemistry.
2. Histology and Embryology.
3. General Pathology.
4. Bacteriology.

The whole administration of both the College and the Hospital is in the hands of the Dean who is responsible to the Corporation.

The Dean is paid Rs. 2500 per month. The control of the Institutions is in the hands of the Committee called the Hospital Committee consisting of 16 members, 10 of whom are appointed by the Corporation, three by Government from amongst the members of the Corporation and three are selected from outside the Corporation by the above 13 members. The Hospital Committee will be helped by an Advisory Medical Board consisting of five members of the Corporation, five members of the staff, the Executive Health Officer of the Municipality and the Dean.

The College was opened on 1-6-25 and first year students have been admitted. The Hospital is not ready yet, but it is hoped that it will be opened in 6 months time.

During last June Mr. Wadia made an offer of 16 lakhs of rupees to the Government to build a Maternity Hospital providing 120 beds, on condition that the Government should give a free site and that, of the 120 beds 60 should be reserved for women of mill operatives. The Government have accepted this munificent offer and the foundation was laid by His Excellency the Governor in June. This Hospital, when complete, will be available for clinical work to the students of the Seth Gordhandas Sunderdas Medical College. This Hospital also will have an honorary staff.

It was the aim and effort of Late Dr. Bahadurji to see independent Indian Doctors starting and conducting efficiently big Hospitals. During his life he worked hard to achieve his object and owing to premature death, though he could not do anything else, he succeeded in impressing his high ideals on the minds of his Indian colleagues. The result of it is that Bombay possesses a good number of highly qualified Indians. It is a matter of satisfaction that Bombay has seen the achievements of these ideals though it has taken a generation. The Corporation and the people of Bombay must be proud to start such institutions of immense importance as regards training young men, developing science and relieving the suffering of the afflicted. I believe, that the Bombay Municipality is the first in the whole of India to have a College of its own. No doubt they had generous donations from philanthropic gentlemen, still they have undertaken a great responsibility to maintain these institutions efficiently in future.

Here it must be mentioned that in expediting the completion of some of the Hospitals mentioned above, the public of Bombay are extremely grateful to his Excellency Sir Leslie Wilson. He, since his arrival in India, has taken a very keen interest in solving the problem of medical relief and education. It is mainly due to his efforts that certain donations were obtained and it is hoped that he will do more before he leaves Bombay.

Perhaps it may be asked why there are six surgeons and six physicians when the King Edward Memorial Hospital has only 220 beds including Maternity and Ophthalmic wards. Though at present it is not decided how the subjects to be taught by these Surgeons and Physicians will be divided, it is quite certain that such a large staff will be able to devote much of their time to teaching and thorough examination of patients and the consequent benefit to the students will be immense. Here I should not fail to mention that even in the Old College the Government never tried to put a square peg in a round hole. I believe it to be a good principle that any Surgeon or Physician

in any teaching institution should not be given more than 40 beds, and if he is on the staff of more than one Hospital, this number should be reduced. The present professors and teachers in the Grant Medical College (which is the Old College) and the Medical Officers in Sir J. J. Hospital are not allowed to hold any appointment in the new College or Hospital.

The present staff of the new College are all young, able and highly qualified gentlemen. The Dean, besides being a well known Physician, is a tactful and able administrator. I am sure that with loyal co-operation and harmonious working, this body of Honorary workers will soon establish high traditions in the new institutions they have voluntarily undertaken to work and will soon make the College famous for its teaching. A Medical College, besides being a centre for imparting instructions in Medical science, must also build good character which is so highly essential to every Medical man in his noble profession and this can be achieved by increasing social intercourse between the students and the professors whose character will be the guiding example.

About twenty years ago the Grant Medical College had started courses of post graduate study in Ophthalmology, Bacteriology etc. But as the number of students began to increase and as their needs were more urgent than those of the graduates, these courses were discontinued. The facilities for post-graduate study in India are few, and if it is necessary for every medical man to keep in touch with his science which is daily advancing, it is essential that every College should afford facilities for post graduate study particularly to its own graduates. About three years ago the Government deputed a very able Medical Officer to go to Miraj where Dr. Wanles of American Mission has established a very well equipped Hospital and is doing excellent work. This Hospital has established a great reputation in Bombay Presidency and patients from all parts of the Presidency go there. Hence it affords great facilities for post graduate study. What the ultimate result of the negotiations between the Bombay

Government and Dr. Wanles was, it is not known; but it is hoped that with increased facilities the question of post graduate study will be settled.

All the information about Seth Gordhandas Medical College and King Edward Memorial Hospital were supplied by the Dean of the College, to whom the writer feels very grateful. The information about other institutions is given in its broad outline without going into details.

In these days of cry for Reforms it is necessary that the problem of Medical education in India should be thoroughly investigated and the system of imparting Medical education be reformed. This should be done either by the University in each province or, better still, by calling an All India Medical Conference when the medical representatives of all Indian Universities can discuss the question of Medical education in India and arrive at some conclusion as regards uniformity in curriculum, examination, diploma or degree and post graduate study.

The Clinician and the Laboratory

(By Lt. Col. F. F. ELWES, M.D., C.I.E., I.M.S.)

In the early days of the introduction of Laboratory methods, the Physician was loathe to accept Laboratory results and Diagnoses principally because he did not understand or appreciate the significance of Laboratory methods. This was followed in due course by a swing of the pendulum in the opposite direction with the result that of late far too much attention has been paid to the results of Laboratory tests and Laboratory diagnosis, if I may term it such. The worst offenders are the laity, many of whom think that such diseases as Enteric fever, etc., can be diagnosed with certainty by the Bacteriologist and by the Bacteriologist alone, and are averse, indeed sometimes refuse, to accept the diagnosis of Enteric fever unless supported by the Bacteriologist. The Medical practitioner is, however, not entirely without blame

for this state of affairs, for he is himself very often far too prone to rely on laboratory results rather than his own clinical acumen for diagnosis, and the public seeing this attitude of the Medical profession not unnaturally pays undue weight to laboratory results. In order to realise the true significance of laboratory reactions, the nature of each should be carefully considered and whether the result is + positive, positive, or negative. By the term + positive I mean a result which definitely proves the existence of a certain disease. The Bacteriological tests or reactions for Typhoid fever well illustrate what I mean.

(1) The culture of *Bacillus Typhosus* obtained from the blood of a patient is certain proof that he is suffering from Typhoid fever and may be considered a + positive reaction.

(2) A strong positive Widal reaction, such as +1 in 100 is an indication, but not proof, that the patient is suffering from Enteric fever and may therefore be termed "positive."

(3). A negative Widal reaction indicates that the patient is not suffering from Typhoid fever and may therefore be termed, "a negative reaction."

With the exception of No. (1) however, the tests have very little value in diagnosis unless all the facts of the case are known, and the Physician in charge can alone rightly interpret the significance of these reactions, for not infrequently a patient giving a strong positive Widal reaction is not suffering from Enteric fever at all, whilst one who gives a negative Widal reaction is in reality suffering from the disease. In support of this statement I will quote a few examples of cases, which for the most part have been quite recently under my care:—

(A) Cases in which Widal reaction was strongly but the disease was not Enteric fever.

(1) "E"—An adult male European—suffered :nuous fever for some weeks. Widal reaction + 1 in 100 first diagnosed as Typhoid fever, the case ultimately

be a deep seated liver abscess. No previous history of Typhoid or inoculation, although the patient had suffered from "fever" some years previously in Africa.

(2) "M"—Boy aged 16....Admitted into hospital complaining of continuous fever of 14 days' duration. Widal + 1 in 200. Clinical signs indicated dry pleurisy. The affected side was strapped and the temperature fell to normal within 10 days and the patient was discharged from hospital quite well 16 days after admission. Enquiry showed that the patient has been inoculated against Enteric fever.

(B) Cases with negative Widal reaction which proved to be Enteric fever.

(1). "C"—Boy aged 16—Admitted into hospital with continuous fever of 10 days' duration. Clinically a case of Typhoid fever. Atropine reaction positive. Blood culture and Widal reaction Negative on the 13th and 20th days of the disease. Blood culture positive and Widal + on the 28th day of the disease. The patient went through a typical and very severe attack of Enteric fever, but had the first two Negative Widal reactions been relied upon as contrary indications of Enteric fever and the patient not been treated as such, he probably would have died before a positive Widal reaction had been established.

(2) "P"—Male adult admitted to hospital with 10 days' fever. Clinically Enteric fever. Atropine reaction+. Blood culture and Widal 11th day—(Negative). Treated as Enteric fever. Haemorrhage 17th day. Widal positive 1 in 200 on the 18th day.

It is true that both the above cases ultimately developed a positive Widal reaction, but by the time these reactions were established they were useless as an aid to diagnosis or treatment.

It is not however Enteric alone in which Bacteriological reactions are apt to be misleading, but the same holds good for

other diseases such as, Diphtheria, Dysentery, etc., and I will quote one more case in illustration of this.

"M"—Adult male admitted to hospital complaining of severe attack of Dysentery. Emetine gr. 1 injected immediately. No improvement. 23 stools passed in first 24 hours. Clinically a case of Bacillary Dysentery. Examination of stools failed to reveal amoebae and indicated Bacillary Dysentery. Stools sent for culture. Result two days later—(Negative). The case however, being clinically one of Bacillary Dysentery, at the same time as the stools were sent for culture, an injection of 20 c c. Antidysenteric serum was administered. Immediate improvement followed, the number of stools being reduced to seven in the next 24 hours and then to two, the patient making a rapid recovery. It is, of course, possible that the improvement was "post hoc" and not "propter hoc," but the indications were all in favour of Bacillary Dysentery in spite of the Negative Bacteriological result.

It is impossible in a short article to enter into details as to the causation of these apparently fallacious Bacteriological reactions, but I shall have achieved my object if I succeed in impressing upon the student that such a reaction "per se" is of very little value in a number of cases but, nevertheless, if intelligently interpreted it may be of real assistance in diagnosis, even though the reaction is apparently "contradictory," for, to my mind a negative Widal reaction is sometimes of more value as an indication of Typhoid fever than a Positive reaction.

Another class of Laboratory examination which requires both knowledge and experience to interpret correctly, is the examination by X rays. Here again the uninitiated have a profound belief in the value of X rays as a means of diagnosis. They appear to be under the impression that the X rays will reveal almost anything in the human body quite overlooking the fact that the value of the X ray to a great extent lies in its power of penetrating certain structures, and this power of penetration is not confined to physiological tissues but is equally well marked with many pathological tissues. The effect of this unbounded

faith in X rays is that a great proportion of the public are firmly convinced that if they are suffering from any internal disorder they have only to be X rayed and the disease will be revealed. The Medical profession is, here too, not entirely free from blame, for, some practitioners whether through ignorance of the limitations of X rays, or in order to defer to their patients' wishes, send cases for X ray examination in which the X ray cannot be expected to materially assist in diagnosis, and they sometimes unhesitatingly accept the verdict of an X ray photograph even though it may be opposed to the clinical indications.

I will again quote a few cases which have come under my own observation, in order to demonstrate the limitations of X rays.

1. An adult male was admitted to hospital suffering from pleural effusion. The fluid was removed by paracentesis but subsequently the patient developed a localised area of dulness in the anterior axillary region. A radiograph of the chest was taken with a view to ascertain whether the dull area was consolidated lung or encysted fluid. The Radiologist's report was "No fluid in the pleural cavity." Nevertheless an exploratory needle was inserted and fluid withdrawn!

2. A European adult male complained of pain which was diagnosed clinically as Renal Colic. X ray photograph failed to reveal a stone in the Kidney, Ureter, or Bladder, but a stone was passed some days later.

3. A lady complained of pain in the vicinity of the gall bladder. X ray photograph showed a shadow in the region of the gall bladder which was thought to be a gall stone. As the symptoms clinically were not those of gall stones a second radiograph was taken with precisely the same result as the first. The patient was accordingly operated upon. Adhesions were found around the gall bladder, but on opening the gall bladder there was no stone!

These cases are not quoted in any spirit of "carping criticism" but solely with a view to impress upon the reader the necessity for not basing a diagnosis on the X ray picture alone, more especially when it is opposed to clinical signs. That Radiography is an extremely valuable asset to diagnosis I am fully prepared to admit, but its limitations must be recognised.

There are two other classes of laboratory results which might be commented on. One is the Pathological report, and the other is the Biochemical reactions. The former is dealt with more by the Surgeon than the Physician and therefore I do not propose to discuss the value of Pathological reports, whilst the latter is still, more or less, in its infancy, and I have not sufficient experience in the methods of Biochemistry to express an opinion as to the reliability of the various reactions and their importance as an aid to diagnosis.

In conclusion, I desire to state that though the cases quoted by me are all adverse to laboratory results, I have no intention of deprecating the value of laboratory results, be they Bacteriological, Radiographical, Pathological or Biochemical, as each in its turn may be, and often are, extremely useful in aiding diagnosis; but my object in writing this article is to draw attention to the fact that an implicit reliance on laboratory results may lead to faulty diagnosis and harmful results. A complete knowledge of all the facts of the case, both clinical and laboratory, is necessary in order to make an accurate diagnosis and it is, therefore, only the Medical man in charge of the case who can correctly interpret laboratory findings and venture with any certainty upon a diagnosis. The laboratory worker is an extremely useful assistant to the Clinician but a bad master.

The Physiology of Pain.

By Major G. E. MALCOMSON, M. D., I. M. S., Professor of
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In the following article, no attempt is made to deal with the subject of pain, otherwise than from the physiological standpoint. The ethical significance of pain, its diagnostic and therapeutic indications, are not touched upon, except in so far as they assist in elucidating the mechanism of its production. It is a moot point whether pain being a pathological phenomenon can be said to have a physiology, but, as certain portions of the body seem to be set apart for the reception, transmission and perception of painful stimuli, impulses and sensations, and, as it is almost impossible to conceive of an organism attaining perfection without the protective guidance of pain, physiologists have long claimed the subject as their own. Other morbid phenomena, such as vomiting, oedema etc., too find a place in physiology textbooks.

No originality is claimed for the opinions expressed in the succeeding remarks, which have been largely gleaned from the brilliant researches of Head, Bayliss, Trotter and others.

In Ogilvie's Dictionary, pain is defined as an uneasy sensation in animal bodies. The Concise Oxford Dictionary shirks the definition by declaring pain to be an anguish of body or mind. Behan (ref. 1.) states that, "Pain is distinctly a mental interpretation of some abnormal and generally harmful process which is occurring in the organism. It cannot be classed as a sensation, but rather is the result of the perception and interpretation of sensation by the mind. Also that "Erb held that every increase of sensory stimuli is capable of producing pain as soon as it attains a certain intensity."—and many other authors have expressed similar conceptions.

In the above definitions two ideas are apparent. 1. Pain is a mental condition, and there is no definite relation between

the intensity of the stimulation and the severity of pain experienced.

2. Pain differs from all other sensations in being non-specific and may be produced by any mode of stimulation acting on an appropriate receptor if carried to excess.

As regards the second of these ideas, as will be shown later, there are reasons for supposing that pain as generally understood is a specific sensation with its specific receptors, although over-stimulation of other receptors may be productive of considerable discomfort. The other idea of pain, that of its being a mental condition is well exemplified by Fraer in the "Golden Bough," where he relates how in the festival of Cybele and Attis as held at Rome the High Priest drew blood from his arm and presented it as an offering. Spurred by this example and made delirious by the wild music "The inferior clergy whirled about in the dance with wagging heads and streaming hair, until wrapt into a frenzy of excitement and insensible to pain, they gashed their bodies with potsherds or slashed them with knives in order to bespatter the altar and the sacred tree with their flowing blood." Religious history teems with like instances of inhibition of pain by intense enthusiasm, excitement or earnestness.

Granting then that stimulation of any receptor may give rise to very uncomfortable sensations e. g., deafening sounds, obnoxious odours etc., the weight of evidence favours the opinion that pain, as ordinarily understood, is a specific sensation, with its own specific receiving organs, and that, although the skin is par excellence, the structure in which the pain sense is best developed the reception of painful stimuli is by no means confined to the surface of the body, though the stimulus varies widely in different regions.

The probable nature of the pain receptors may be inferred by a consideration of the cornea. Now pain is the only sensation which stimulation of the cornea is capable of producing, and the nerve-endings in the cornea consist of a terminal plexus of

fine fibrils, which lose themselves between the cells of the stratified epithelium covering this structure. As such naked nerve-endings are found in the epidermis and other structures it is not unreasonable to suppose that they represent the pain receptors.

Trotter (ref. 4) ascribes this function of the skin receptors to their uninsulated condition, pointing out that in all the other nerve-endings in the skin insulation is carefully provided for. He says, "This remarkable coincidence naturally tempts one to make some close enquiry into the mechanism of pain. Pain has long been recognised as peculiar amongst sensations in having no specific stimulus. All other sensations are excitable by one stimulus which can be expressed as a simple physical process. Touch is excitable by a moving contact—heat by tranference of heat to the body—cold by abstraction of heat from the body. Pain on the other hand is excited by a whole series of stimuli which cannot be generalised under any single character except perhaps, the rather fantastic one that they might be harmful if they were stronger. The anomalous nature of the pain nerve is well shown in its ready excitability by the harmless Faradic current, and its complete indifference to the harmful X-Rays. In comparison with the stimuli which excite the other forms of skin sensibility, those which are effective for the pain nerves are relatively gross and energetic. Again, the quality of the sensation of pain is quite different from any other sensations in possessing a certain explosive suddenness, and in impelling to some kind of motor response. In respect to its high threshold its intensity and its tendency to produce motor responses, the pain of normal sensibility bears in its subdued degree, a decided resemblance to the general characters of sensibility in the recovering area. It seems natural to suspect, therefore, that if the latter form of sensibility owes its peculiarities to an undue exposure of the recovering axis-cylinders to somatic contact, the normal pain fibre owes its anomalous characters in comparison with other sensory fibres to its terminal arborisations being exposed in a certain degree to a similar influence. According

to this view, the physiology of pain, is that the sensation is set up in fibres which are maintained in a special and peculiar condition, the consequence of which is, that while they are not particularly sensitive to excitation, when they are adequately excited they yield an excessive response."

Here, then, we have a comprehensible explanation of the early appearance of pain in the cutaneous anaesthetic area supplied by a regenerating nerve. To discuss the appearances of the other qualities of protopathic sensibility namely, heat not stimulated below 37° C. and cold not stimulated above 26° C. is outside the scope of this article. But it may be observed that, the three, sensations of pain, heat and cold, have, in protopathic sensibility, one point in common, namely, a high stimulation threshold.

According to Von Frey (ref. 5.) there are certain spots in the skin sensitive to pain which are surrounded by insensitive areas, but, as he describes over hundred such spots in one square millimetre of skin, the intervening areas are difficult to demonstrate.

To return to the question whether pain sensation may be produced by over stimulation of the other cutaneous end-organs, the occurrence of dissociated anaesthesia in syringomyelia, in tabes, and in the Brown-Sequard syndrome, where loss of pain and temperature sense may occur, while touch remains intact, would seem to provide additional evidence that this is not so. The nerve fibres conveying the various sensory impulses pursue somewhat different routes from their entry into the cord, until the pons is reached; touch impulses pass along the homolateral posterior columns, and the heterolateral anterior spino-thalamic tracts; pain and temperature impulses along the heterolateral lateral spino-thalamic tract. Above the pons they probably pass in close proximity to one another in the tract known as the fillet, till the ventro-lateral part of the Optic thalamus is reached. The dissociation of the pain and temperature sense from touch can readily be understood from a consideration of these anatomical facts. At

the thalamus, all the sensory impulses undergo re-distribution in two directions (Head and Holmes - ref. 6). Some ascend to the sensory cortex, comprising chiefly the pre- and post-central gyri, the anterior part of the superior parietal gyrus with the angular and supra marginal gyri. The others terminate in the more central part of the Optic thalamus itself.

Here therefore we have two grades of sensory centres:

- (1). A subcortical centre in the Optic thalamus subserving the more non-discriminative elements of the sensation such as pain and temperature, pleasure and the reverse.
- (2). A cortical centre where three great discriminative aspects of sensation are appreciated (Head ref. 7).
 - (a). Appreciation of spatial relations.
 - (b). Recognition of difference in intensity between stimuli, and
 - (c). Appreciation of similarity and difference.

The relationship of these two centres to one another is thus described by Head (ref. 8):

"These two sensory centres are not independent of one another, but the activity of the cortex exerts a dominant influence over the response of the optic thalamus. Now it sometimes happens that a gross organic lesion destroys the path of these controlling influences, and the thalamus is set free to manifest its reactions unchecked. Every stimulus capable of evoking discomfort or pain, and even, in some cases, pleasure, now produces an exaggerated effort on that half of the body opposite the lesion.

Turning now to visceral pain, many illuminating observations appear in the above quoted address by Head (ref. 8). The viscera have been described by some as insensitive because the ordinary stimuli of touch and temperature and also some nocuous stimuli do not give rise to any appreciable sensation. This is probably because the viscera are normally sheltered from such

stimuli, but experience of any of the forms of visceral colic, with which the clinician is familiar disposes off the idea of the insensitiveness of the viscera without any great stretch of the imagination. As a rule visceral stimuli do not pass into consciousness, being inhibited by a certain resistance in the central nervous system to impulses which tend to be unpleasant: abnormally, however, and under certain conditions, they may be experienced as conscious sensations; thus persistent impulses gradually wear down this resistance, excessive stimuli may break it down at once, and in the case of a nervous system of weakened resistance from any cause, i. e. in neurasthenia, conscious visceral sensations are a prominent factor; it need hardly be said that more than one of these conditions may occur in the same individual.

The viscera are believed to have a double afferent nerve supply, the one of which corresponds to the deep system of nerves which in the limbs supplies muscles, joints etc.; from the viscera, these nerves convey sensations which have a definite localising value and by their means painful impulses arising in a viscus or serous membrane actually produce a sensation of pain in the viscus or membrane concerned. The other afferent nerve supply has no such localising power, but the pain is referred to another, possibly, a distant part of the body from the lesion; but an aneurysm of the ascending aorta produces pain over the left shoulder down the inner surface of the left upper arm and in and above the left eye; mitral stenosis causes pain and tenderness in the cutaneous areas supplied by the sixth and seventh dorsal nerves and also over certain scalp areas and so on.

To understand referred pain, it is necessary to mention the system of nerve fibres which Bayliss (ref. 9) has called antidromal; these fibres are present in the posterior roots of the spinal nerves and are capable of conducting impulses towards the periphery, i.e., in the reverse direction to that usually found in an afferent nerve. They are trophic in function, their trophic influence being manifested by the condition of the skin known as Herpeszoster when the posterior root ganglion is inflamed. Herpeszoster is accompanied by severe pain which appears before

and persists after the eruption. A third manifestation of antidromal conduction is in vaso-dilatation. Now the area of referred pain produced by a visceral lesion as in aortic aneurysm mentioned above represents with exactitude the area affected by Herpeszoster in the case of lesion of corresponding (segmental) spinal nerve. That is to say a visceral lesion through its sympathetic supply, "irritates" certain segments of the cord which "irritation" is manifested by cutaneous pain and tenderness through antidromal impulses along the corresponding segmental spinal nerve. This however, does not occur until the above mentioned resistance to unpleasant visceral sensation in the central nervous system has been broken down.

Another interesting chapter on the physiology of referred pain is its presence in certain scalp and head areas which at first sight do not appear to be segmentally connected with the viscera in question. To understand this, it is necessary to appreciate the fact that in addition to their sympathetic supply the viscera also receive afferent innervation from the "para-sympathetic" of which the vagus and glosso-pharyngeal nerves form a part. The vago-glosso-pharyngeal system represents the visceral portion of a great complex of segments of which the trigeminal nucleus and the central connections of the upper cervical nerves form the somatic; hence the cutaneous areas supplied by the latter nerves are, by anti-dromic conduction, liable to become tender when the corresponding segmental levels become irritated by unpleasant vagal impulses.

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The Management of a Case of Labour Complicated by Premature rupture of the Membranes

By Dr. P. VENKATAGIRI, M.B., C.M.,

Assistant Professor of Midwifery, Madras Medical College.

The premature rupture of the membranes is an obstetrical complication of very grave import in the majority of cases. For very often, it is the harbinger of serious troubles a-head and unless properly handled, may endanger the life of the mother or child or both. In any case the premature rupture of the membranes ought to make the obstetrician seriously to think, for upon his judgment and skill in diagnosing the cause of it and in applying suitable measures to combat the complications that may arise or have arisen, the lives of the mother and child depend. In this article, I shall deal with only what I consider the proper management of this serious complication. This is singled out for the separate and the pointed attention of the students of obstetrics so as to focus all thoughts on a grave subject.

It is well known that during labour the proper formation and action of the bag of waters are the "sine qua non," preliminary

procedures or the first step for the easy descent and advance of the presenting part down the birth canal. The bag of waters as you are well aware, has to rupture only when it has properly done its duty, i.e., when it has fully dilated the birth canal i.e., the cervix and the vagina so that the parturient canal is quite prepared for the methodical advance of the foetus during the second stage of labour.

As in every obstetrical complication, the treatment of course depends upon the cause. Hence the prophylactic and preventive measures are those directed for the early recognition often of the coneshaped or sausage-shaped bag of waters, and measures adopted to prevent its rupture, viz, (1) Prevent bearing down in the early stage or 1st stage of labour by advising the patient, or if necessary, by putting her to sleep. (2) Keep the patient in bed and do not permit her to walk about. (3) Be careful when you make the vaginal examination and see that you do not rupture the abnormally shaped bag of waters (4) Early recognition and correction by external manipulations, if possible, of all malpresentations. (5) Do not rupture the bag of waters, except under exceptional circumstances as in Hydramnios, before it has done its duty in the first stage of labour even in normal presentation.

Every case of premature rupture must be judged on its own merits. No two cases are alike. Not in every case is interference necessary. Even in those cases where it is necessary, the line of treatment will vary according to the nature of the case. Now, there are cases in which the membranes have ruptured before the woman was aware that she was in labour; especially so is this, in some types of primis where the abnormal wetting of the clothes while the woman was at work and while stooping or bending to pick up or lift up something, was the first and only event noticed at the time. The patient was not aware of its significance, but her mother or some other experienced parous woman might have got frightened at the unexpected event and you might have been called in for advice. The first thing to do, if the patient is not

already in bed, is to put her in bed and keep her there, preferably in Trendelenburg or any modification of the same position, to suit the occasion, so as to prevent further escape of Liquor Amni as far as possible. Then proceed to investigate the case thoroughly, by palpation, by taking her pelvic measurements and vaginal examination. Find out the presentation, size of the dilatation of the os, look for any prolapse of the cord, compound presentation, tumours obstructing the genital passages etc. If there is nothing abnormal, either in the pelvis, the foetus or the presentation, leave her alone. Give her a sleeping draught. If you see the patient in the afternoon give the following mixture.

Re, Chloral Hydras grs XV.
Pot Bromide grs XV.
Syr Aurantii dm l.
Aqua Chlorof ad oz l.
Ft Mixture St.

If you are called in late at night, give an injection of 1 c. c. of Omnopon or gr $\frac{1}{2}$ of morphia. Keep her mind free from excitement, worry and anxiety, when there is nothing grossly abnormal that you can make out. Very often you will realise that by morning the patient will get good pains, the cervix will get dilated and labour will terminate as if the patient is none the worse for this accident. About 20 to 25 per cent of the cases of premature rupture will terminate in this happy way if meddling mid-wifery is not practised. Above all, do not get into a funk when you are called upon to treat a case of premature rupture of the membranes.

When you are called in to see a case, if the woman is having very good pains, if the condition of the mother and foetus calls for no interference, if the presentation is fairly suitable and if the advance of the presenting part is quite satisfactory, wait and watch, but do not interfere. Surely one of those lucky cases, where, in spite of premature rupture of the membranes, the woman is none the worse for it.

If the foetus is dead or macerated and head presenting, and if the mother is not in distress and there are no constitutional symptoms that call for immediate interference, you can give an injection of pituitrin and hasten delivery. Very often this line of treatment is rewarded by dilatation of the cervix and expulsion of the foetus. In a primi, if you think in such a case that the head will cause tearing of the perineum, you may perforate it and deliver.

In those cases where labour has set in, but pains are very feeble or absent and os admits a finger or two with premature rupture of the membranes, child alive, and presentation suitable, but the labor is prolonged and constitutional signs and symptoms are arising, as evidenced by the rapidity of the pulse, exhausted and anxious condition of the mother, and particularly a rise of temperature 100° or above, and fouling of the lochia—immediate interference is called for. (1) Give hot copious vaginal douches of Lysol 1 dr. to a pint of normal saline. This will have the effect of softening the cervix, stimulating the uterus to contraction and in overcoming the rigidity and spasm of the cervix, and of stimulating the “set cervix,” of even an elderly primipara. (2) Administer stimulants as Glucose, strong black coffee and plenty of cane sugar. Massage the uterus if it is flabby and put a tight abdominal binder if it is lax and pendulous. (3) Empty the bladder if it is full, and also the rectum. (4) Administer the following mixture :—

Re, Quin Sulph grs X.
 Acid Sulph Dil m XX.
 Glucose dm. IV.
 Syrup Aurantii dm. I
 Aqua Chlorof ad oz. I.

Ft Mixture.

Give one oz. one every two hours, if necessary only to be repeated thrice.

(5) Emphasize the action of Quinine by injecting small doses of Pituitrin m III—V. in the interval. These small doses of Pituitrin never cause asphyxia of the foetus.

These measures will be found quite helpful in the majority of the cases. If even in spite of these measures you find the cervix not dilated, try next a plug of gauze soaked in Ichtyol and glycerine (Ichtyol-Dm I in glycerine oz one) into the cervical canal, or, if the indications are urgent, use the Rebes bag if available, for dilating the cervix, or use the metal dilators of the Bossi type as a last resource.

If from the very commencement of the case the indication is for Caesarian section, as an abnormally small pelvis, or an abnormally big head, or absolute degrees of pelvic contractions, or a markedly hypertrophied cervix or stenosed condition of the cervix or atresia of the soft parts below, either acquired or congenital, or any tumors blocking the parturient canal, or those cases of habitual death of the foetus during the course of prolonged labour, by all means quickly determine and do Caesarian section instead of wasting valuable time and unnecessarily exposing the mother and the child to the various risks of the conservative methods of procedure in these difficult cases.

Relapsing Fever

By Dr. ISWARAYYA, M. B., B. S.,

Hardypet-via Pollachi.

Relapsing fever though not rare in South India, the population of Madras is pretty free from it and hence the students and part of the medical profession as well, are not familiar with it.

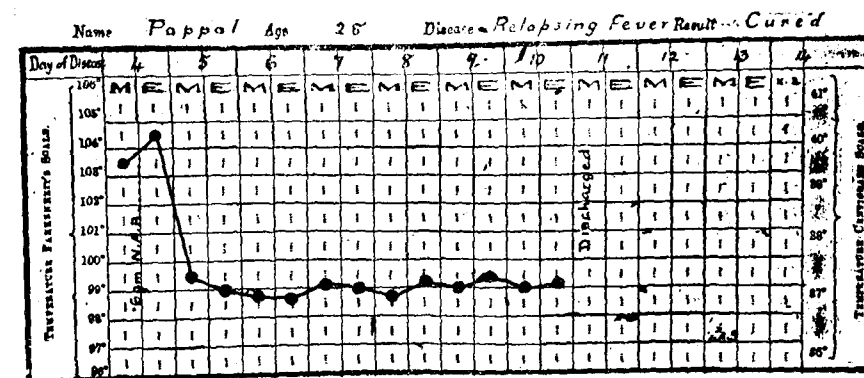
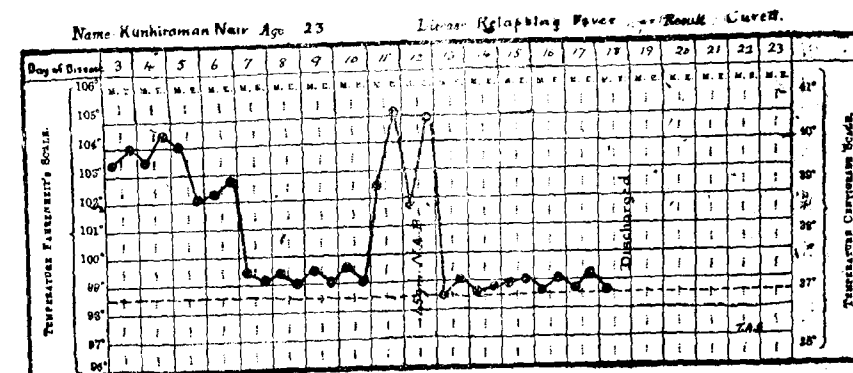
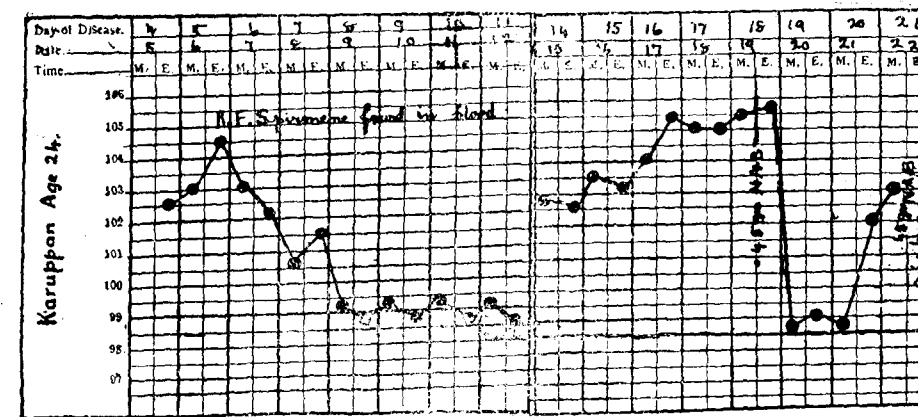
I had occasion to come across a rather severe epidemic of it up the Hills in one of the plantation gardens where, I believe, it is not an unfrequent visitor.

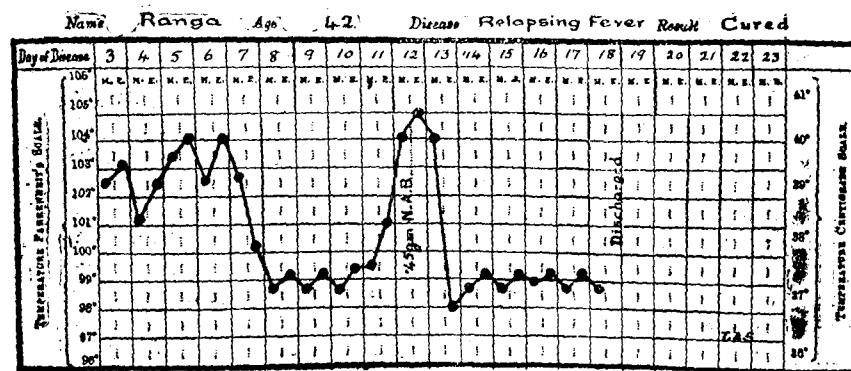
Coolies were admitted into the Hospital from a neighbouring garden with a history of irregular fever for from four to six days, fever not amenable to quinine. (By the way, quinine in these plantations being familiar to every soul literate or illiterate, old or young, and being considered the specific for any fever).

The temperature of these patients came down in a day or two after admission—crisis mostly, and in some gradually. Severe intractable diarrhoea was noticed in about 80% of these cases then, and with the fall in the temperature about 30% of the cases got into a low delirium, subsultus tendinum, picking at the bed clothes etc; this condition lasted one to three days ending in death. About 20% of the cases developed intense jaundice at the crisis. Patients who had jaundice, delirium or dysenteric form of enteric, invariably died, about 8 to 10 days after the onset according to their history.

I was rather puzzled as to the diagnosis of the disease and treatment; about 10 cases dying in a week in a hospital with 50 beds. Things went on in this way for some time, when casually I noticed one day a patient admitted for dysentery, after about a fortnight developing a temperature of 104° continuous for 3 days with lice (Pediculi Vestimentorum) on his body and clothes. Here I should pause to say that the hospital I am in charge of does not provide dress for the patients, nor mattresses nor some of the other necessary hospital equipment. Pulse and temperature are taken B. D. by me.

The dysentery patient was lying next to a patient who died with the above symptoms some days previously. The lice made me think of the possibility of relapsing fever. This fact with a few others comprehending all my knowledge of Relapsing fever. About this time also a ward attendant developed these symptoms and when examining him, showed me an old broken Novarsenobillon tube telling me that that was the treatment for the fever which baffled me so long. On enquiry he said that on another garden he had witnessed coolies dying with the same symptoms, and the doctor there was injecting N. A. B. The ward attendant having better clinical knowledge of the diseases prevailing up the hills on plantation gardens, I hastened to collect blood smears on broken window panes, and sent them immediately to the nearest available microscope about 20 miles, with a messenger on foot. The result in about 20% of the cases was positive. In another.





week or ten days the clinical symptoms were also getting obvious patients developing the first and second relapses and further microscopic examinations, confirming relapsing fever. N. A. B. was wired for to Madras and treatment given.

Certain symptoms of the epidemic are noteworthy :

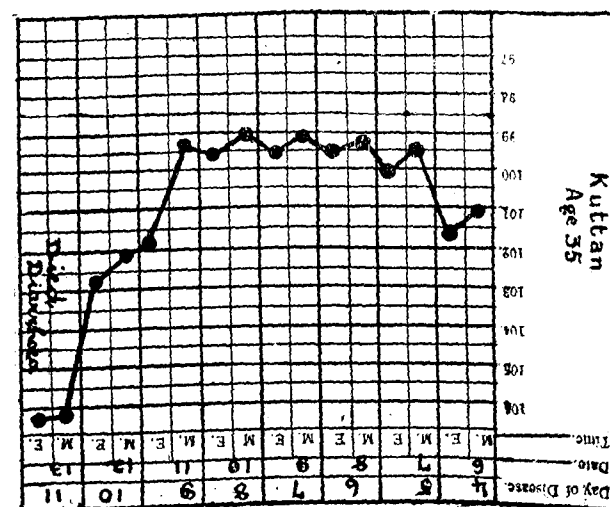
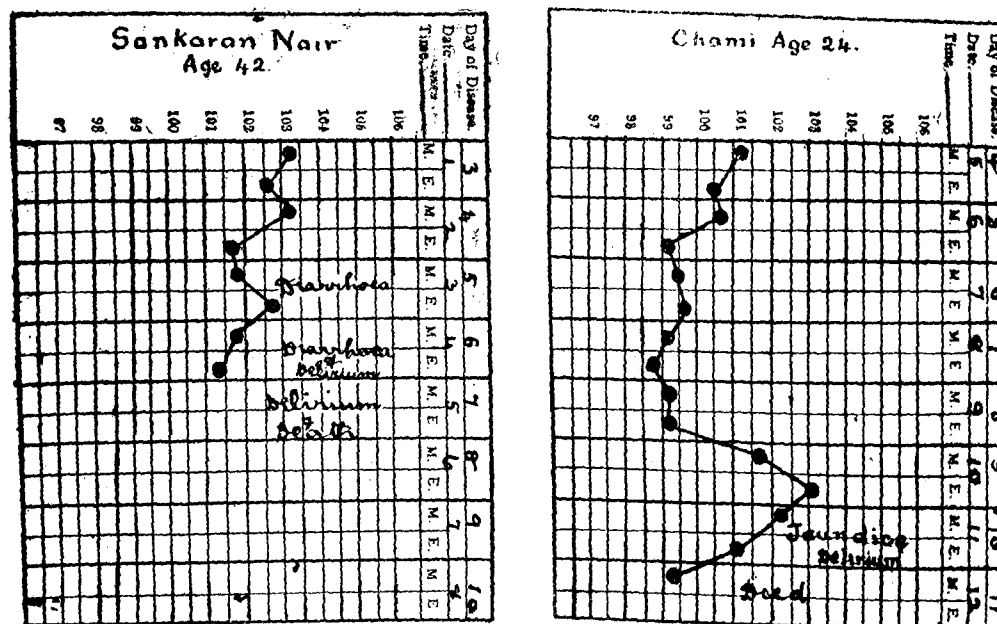
1. Patients invariably died after the crisis or lysis of the primary fever except one who died in the pyrexial period with a temperature of 106.5° Fahr.

2. Diarrhoea of a severe type, in some cases dysenteric, characterised 80% of the cases, and almost all the fatal ones.

3. Delirium of the low muttering type (Subsultus tendinum) and picking at the bed clothes were noticed in all the fatal cases developing after the temperature of the primary fever had come down.

4. About 20% of the cases developed intense jaundice, all ending in death.

5. Lice found on the body of most of the patients, most of whom had scabies. The lice were *Pediculi Vestimentorum*, white or gray coloured with a dark or red speck about the centre of the body. They multiply very rapidly and the eggs resist disinfection by heat. The adult *Pediculi* moult after the fashion of a cockroach, and the moulted cuticle or ectoderm clinging to the body give them the appearance of a scorpion on a small scale. During day they cling to the clothes mostly, and bite at nights like the bed bugs. It is said that the lice do not inject the *Spirochetes* with the bite, but the scratching of the skin due to the bite crushes them, and the *Spirochetes* find their way into the human body through the abrasion as a result of scratching. This was in keeping with the observation that most of the patients having scabies provided any amount of raw area for the organism to gain access to the blood stream.



6. Patients below 15 years bore the attack better- Six out of the 50 were below 15 years, three came round without treatment, and three with 3 grain N. A. B.

7. The first relapse in some cases was more severe than the primary fever, and there were two deaths during the first relapse.

Before concluding, I would like the student to kindly keep in mind the fact that there are innumerable handicaps to diagnosis in the mofussil, and living in a world of "Oil Immersion Lenses" "Guindy Cars", "Haemocytometer", "Esbachs Reagent" and "Van Den Berg's Reaction" tend to underrate the importance of observation by the bed side and clinical diagnosis. They should try to guard themselves against this tendency.

Statistics.

No. of admissions		49
No. of deaths		16 One after treatment.
Cases with Diarrhoea		40 Four with Dysentery.
Cases with Jaundice		8 All died.
Cases with Delirium	...	15 Fourteen died.
Cases below 15 years	...	6 No deaths, 3 treated.

Treatment started on 18th August.

Relapsing Fever Among Indian Labourers in Nilgris.

By Dr. K. C. GEORGE, M.B., B.S., "Mango Range", NILGRIS.

Relapsing fever, as an established disease is a fairly easy one to recognise, as its name implies. Its course is marked by periods of high fever, alternating with fever-free intervals. The ordinary course of untreated Indian Relapsing Fever is five to six days high fever, a sudden drop of temperature and freedom from fever for six to nine days, a relapse of fever lasting for three or four days followed by another fever free interval with probably

further relapses until the patient either dies or slowly recovers.

Unfortunately, one cannot wait for the typical features of this disease to reveal themselves if one means to do any good, but has to spot the illness at the earliest possible moment both for the sake of the patient and in order to safeguard others from infection.

The most striking features of the disease in the beginning are :—

Extremely sudden onset.—The individual may be at work in the field in the forenoon and desperately ill in the lines an hour afterwards; or he may actually collapse whilst at work and even die in the middle of his work.

Intense Headache and Giddiness.—In practically all cases, the patient from the very onset of the disease suffers from intense headache located about his forehead, which may be accompanied by giddiness severe enough to cause him to lose his balance and fall to the ground and be unable to rise again.

Pain in the Back and Limbs.—In the absence of this degree of giddiness, the patient may endeavour to return to his lines when the pain and stiffness of his calf muscles may render walking difficult, and give him a gait which is altogether typical. The man may move slowly and heavily with steps that seem to stick to the ground, he will appear to be insecure over his legs and will seek whatever support he can to help himself along and his whole appearance will convey the idea that his body is too heavy for his tottering legs.

Temperature.—Is usually very high rising to 104° or even 106° almost immediately the patient is struck down; shivering and sweating so typical of malaria generally do not occur.

Loss of Consciousness.—Such as is seen in some of the malignant malaria is almost unusual, though delirium and loss of self-control is frequent, the patient shrieking and struggling aimlessly

or else shambling off in an uncertain and purposeless direction evidently without knowing what he is doing or where he is going.

These signs tend to identify the disease and in the course of an epidemic when they have become familiar they are easily recognised, but the spotting of early cases by one who is not familiar with the disease, or is not suspecting the disease is very difficult as it is likely to be confused with Malaria, Plague, Pneumonia or any other of the many fevers which have a sudden and violent onset.

There is only one way in which the disease can be diagnosed with certainty and this is by Microscopic examination of blood. This examination is essential in the early cases and should be resorted to even in small cases. The examination itself needs a trained Microscopist, or at any rate one who is accustomed to the examination of blood smears, but the making of the necessary smears can easily be taught to anybody accustomed to using their fingers and the films once made can be despatched by the post for examination.

Preventive-Treatment :—Wash the body all over with kerosine soap and hot water. Dress all hairy parts of the body, preferably after the hair has been cut short, with kerosine coconut oil, steaming all clothes, *cumblies* and other fabrics. Kerosine Soap is made by mixing one part of soap, in chips with 4 parts of water and 2 parts of Kerosine Oil and working them well together. 'Kerosine Coconut Oil' consists of equal parts of kerosine and coconut oils well mixed together. Steaming of clothes etc., may be done in a barrel (Serbian Barrel disinfection) and live steam kept in contact with clothes for 30 minutes.

Curative —Novarsenobillon ampoules '6 gram intravenously during the pyrexial period produces the most effective cure. One or more injections may be required.

Patient kept under observation until all possibilities of relapse are removed, and sufficiently well nourished during the period.

The Sex Chromosome

By Dr. A. ANANTHANARAYANA IYER, B. A. & M, B. B. S.

Senior Demonstrator in Anatomy.

In this article I do not make any pretensions to original work. But during the last year and a half I have had the opportunity of making a special study of biological subjects allied to Embryology. Such study has always been a fascinating one, especially much scientific work that has been done during the recent past, with its unravelling of some of the most mysterious and now only half understood processes of life. It is under the belief that these questions will be interesting to others as they have been immensely to myself, that these notes are written. And the problem of the Sex Chromosome is one such.

The starting point of all investigations concerned with the problem of sex determination has been the wonderful fact that after an apparently identical process of fertilization by two gametes, a sperm and an ovum, the result was in some cases a male offspring and in others a female. This naturally led to the belief that the identity of the nature of the gametes of one kind was only apparent and that there was something unknown in the inherent structure of one male gamete from another or of one female gamete from another, that led to these different results. Later, when finer microscopical study of cells became possible and chromosomes were discovered; and people observed the strange and methodic karyokinetic figures in the usual division of cells, the V shaped chromosomes certainly became the focus of all cytological work. And it also became known that a reduction-division takes place during the formation of the mature sex cells and that equal numbers of chromosomes from the two parents go to make up the whole chromosome number of the offspring. Though Gregor Mendel sometime in the sixties of the last century enunciated his laws of heredity on observations on breeding experiments, the laws were completely forgotten till 1900 for lack of scientific support and understanding. But with the new

knowledge of the chromosomes and the way in which the sex cells matured and united, the laws were rediscovered and placed on a clear scientific basis. The chromosomes therefore became the carriers of Heredity, of the Mendelian factors.

It was much later that Henking, McClung and Wilson made the extraordinary discovery in some species of insects that the male and the female had a varying number of chromosomes that one had an odd number, the other the next even number. The extra-ordinary thing in the discovery was, how the reduction to half during the maturation division, could take place in the parent with the odd number. It was observed that the gametes obtained from the odd numbered parent were not identical, but half the gametes had one chromosome more than the other half; and that the result of fertilization with one kind of gamete gave one sex and with the other kind of the same gamete gave the other. This odd chromosome was therefore named the X-chromosome.

We will state an example:—Mulsow observed in the nematode *Ancyracanthus Cystidicola* the following facts:—

1. The male possesses 11 chromosomes in the primordial germ cells.
2. The female possesses 12 chromosomes in its primordial ova.
3. All matured egg cells contain Six chromosomes.
4. In the formation of the male gamete, the chromosomes pair, one (the X) remaining without a partner and when the reduction division takes place 2 primary spermatocytes are formed, one with 5 and the other with 6 (i.e. 5+X) chromosomes. Then the second maturation division divides each spermatocyte to spermatids and thus 4 spermatids are formed 2 with 5 chromosomes and 2 with 6 i.e. (5+X) chromosomes.
5. Eggs fertilised by sperms with 6 i.e. (5+X) chromosomes gave female offspring and eggs fertilised by sperms with 5 chromosomes gave male offspring.

This led to the conclusion that one parent was heterogametic, the other homogametic and the X chromosome which caused the heterogametism was the factor for sex determination.

The line of argument we have followed has taken us one step in the understanding of the nature of the X chromosome. But that is not all. Something more has to be said about it. Parthenogenesis occurs both in nature and in experiment and one has to answer the question as to what determines the sex of the offspring developed partheno genetically, from the mature homogametic Eggs. There is no Phenomenon of fertilization in parthenogenesis and hence the sex determining chromosome cannot be the monopoly of the Hetero-gametic parent alone. But parthenogenesis except under exceptional circumstances produces only offspring of the same sex as the homo-gametic parent. The above-referred exceptional circumstances have been correctly explained, but to mention them will be beyond the scope of this paper. So, if the homo gametic parent also has the sex chromosome it must be 2X chromosomes of which one X goes to each gamete during reduction division. Under this new light the interpretation of Mulsow's example will run thus:—Female gametes are all of constitution (5+X); male gametes are half (5+X) chromosomes and half of them 5 chromosomes.

$$\text{The zygote } \frac{(5+x)}{\text{Male}} + \frac{(5+x)}{\text{Female}} = \text{Female offspring.}$$

$$\text{The zygote } \frac{5}{\text{Male}} + \frac{(5+x)}{\text{Female}} = \text{male offspring.}$$

If thus the determination of Sex is dependent upon the chromosomes, it then becomes like a Mendelian factor; and as the sum total of the individual's characters has to be distributed among the definite number of chromosomes, it is probable that some other characters of the individual than mere sex are also attached to the same sex chromosome. This has brought a new view point. Many sex-linked hereditary characters have been found out, whose detailed study from generation to generation has added another weighty argument to confirm the existence of the sex chromosome. As examples may be mentioned the

barred patterns of Plymouth Rock hens, the coat colour of Tortoise-shell Cats and certain abnormalities in man as colour blindness and Haemophilia.

Finally one is tempted to say a word about sex determination and the sex chromosome in man. But here one is treading on dangerous ground, for human material for scientific investigation is so difficult to obtain, and the observation of workers is apparently so various. Eyer found 22 chromosomes in the male and 24 in the female and he believed 2 varieties of spermatids being formed one with 10 and the other with 12 chromosomes. Wini water found in negro subjects 48 as the number of chromosomes in the ovary and 47 as the number in the spermatogonia with 2 Varieties of sperms with 23 and 24 chromosomes. This need not surprise us for kindred species with chromosome number in the ratio of $N : 2N$ is also known elsewhere in nature. Wieman's investigation has given a number 24 for both male and female, but two chromosomes of the male are different from the rest and from each other constituting an XY pair of which X and Y go to each spermo cyte and make the gametes different. The Mammals, so far as observations have gone are heterogametic in the male and homo-gametic in the Female, and it is probable, whether it be by a pure X chromosome mechanism, or by an XY chromosome combination, that in man also the male sex is the hetero-gametic. And whatever be the incompleteness of observations on man, the sex chromosome as the factor involved in sex determination, is no more a myth but a scientific fact.

Reference : The Mechanism and Physiology of sex determination G. Schmidt.

Migraine

By P. RATNASWAMY, IV Year Class

Migraine is not a common disease here. However, headache which is the most prominent symptom, is of such common occurrence either by itself or associated with other diseases, that one

may be excused for writing a brief review of the disease in this Magazine.

Etiology.—The disease is more common in females than in males, onset being about the age of puberty. It is frequently hereditary, and the patients often present simultaneously psychic instability. Infectious diseases as Influenza or epidemic encephalitis, predispose an individual. Migraine in infants is rare, and even when present, tends to disappear at puberty. Migraine in the adolescents commences at puberty and either diminishes in severity or disappears at menopause.

Symptoms.—The disease has often a prodromal stage. During this stage, the patient may feel asthenic, which later gives her a sense of exhaustion, or on the contrary, she may experience an unusual buoyancy of spirit, noises in the ear, and a smell of perfumes may be associated with digestive, vasomotor and secretory troubles. Only a few of the prodromal symptoms affect an individual, but it is remarkably constant for every patient so that she may be able to forestall an attack. The symptoms proper commence with visual troubles as hemianopsia or scintillating scotoma. A variable time after the visual disturbances (a few minutes to an hour) headache comes on which is at first unilateral, later spreading to the whole head and in severe cases there may be pain in the neck and the arms. Sometimes the pain is so severe that the patient cries out, and avoids all light and sounds and the least disturbance causes excruciating pain. The persistent nausea and the vertigo and the profound indifference of the patient, recall to one's mind the syndrome of sea-sickness. A variable time after (a day or two) the headache diminishes and the crisis terminates by the patient vomiting, or rarely by the patient having a sound sleep. The day after the attack the patient feels weak and indisposed. Generally, all the symptoms of the disease disappear at the end of the crisis, occasionally there is still some headache and lassitude left. With the above symptoms may be associated certain sympathetic and vasomotor troubles as pallor or redness of face, palpebral oedema, coryza, subconjunctival haemorrhages,

epistaxis or even Herpes zoster. Other rare symptoms are paraesthesia of face, tongue, arms and in right-sided Migraine temporary aphasia. Atypical forms are also seen.

Pathology.—A complete discussion of the pathology of the disease is beyond the scope of this article, and it is especially so here, since the pathology is neither definite nor clear. It will be enough to touch on the different main views held about the subject. The first theory holds that it is cerebral angiospasm with sympathetic irritation. The vaso-constriction in the respective cerebral areas produce visual troubles, transitory paresis, temporary aphasia, etc. Sympathetic irritation explains the erythema and pupillary dilatation met with in the disease. Experimentally, immersion of a patient's hand in cold water or the application of ice to the forehead of the patient precipitates an attack due to the vaso-constricting effect. The operation of cervical sympathectomy in migrainous patients brings about an amelioration of the symptoms at any rate. Sometimes the inhalation of Amylnitrite during the prodromal stage aborts an attack.

The second theory claims migraine to be of anaphylactic origin. For support, the adherents quote attacks of migraine which are accompanied by urticaria, asthma, paroxysmal tachycardia etc. In some patients the onset of the disease is determined by taking in some particular food or by inhaling some perfumes. Experimentally, the blood of migrainous patients when injected into cats produces contraction of the muscular coats of the intestines, a similar substance is also found in the blood of asthmatics and patients suffering from urticaria. But it must be remembered that all migraine is not anaphylactic in origin.

The third theory seeks the cause of migraine in endocrines. This explains well the onset of the disease at the age of puberty, and the regular recurrence of the attack in the case of females, at the time of the monthly periods and its cessation at menopause.

A fourth theory attributes migraine to reflex irritation. Appendicular trouble, error of refraction, sinusitis etc, are all factors

capable of giving rise to reflex irritation. The utmost that can be granted to this theory is that these are only predisposing factors and do not in any sense solve the question.

Lastly may be mentioned the migraine due to digestive and emotional disorders and that due to climatic variations.

Treatment—At the outset it may be mentioned that there is no specific treatment. Every case must be studied individually and in detail, and the treatment accordingly instituted. In one case a vegetarian diet may bring about relief, and in another a well-ordered quiet life without excitement may do good. Among the drugs may be mentioned bromides, arsenic and above all, nitro glycerine. The derivatives of salicylic acid, belladonna, aconite, may serve to palliate the severity of the disease but they neither cure the disease nor protect the patient from further attacks. Lastly may be mentioned the endocrine and anti-anaphylactic treatments both of which are rational when we consider the pathology of the disease.

CLINICAL LECTURES

Hemi Plegia

By Lieut. Col. F. F. ELWES, First Physician.

Definition. Paralysis of muscles of one side of the body. Bilateral muscles are not paralysed to the same extent, e.g., abdominal and chest muscles. Muscles of lower and upper extremities affected most. Face muscles, especially the lower ones are also affected though not to the same extent as limb muscles.

Hemiplegia must be a lesion somewhere between the cerebral cortex and the upper part of the pons. The possible situations are :—1. The cortex itself, 2. The corona radiata, 3. The

internal capsule, 4. The crus cerebri, 5, The upper part of the Pons.

Situations.

1. Corona Radiata can be neglected as the upper part of it merges in the cerebral cortex and the lower in the internal capsule.

2. Cerebral Cortex: only occurs as a result of haemorrhage on the surface or meninges and practically always secondary to injury, and hence if there is no history of trauma you can practically exclude cortical lesion.

3. Internal Capsule commonest seat. May be due to (1) haemorrhage from middle cerebral artery, (2) thrombosis (3) embolism.

4. In Crus Cerebri: the fibres are bound together as in the internal capsule and the same signs are seen here, but with one addition, viz. the third nerve is involved here and so there is ocular paralysis of the same side as the lesion, i.e., the facial paralysis is on one side and the ocular paralysis is on the opposite side.

5. In the Pons: practically same effect as in the internal capsule, but, in addition, some of the cranial nerves may be implicated, and pyrexia may be a manifestation.

Causes.

Hemiplegia is more common among old people. Very seldom found in people below 40. Commonest causes are:—

1. Cerebral haemorrhage.
2. Thrombosis.
3. Embolism.

Of these haemorrhage is the most common cause.

Onset is not characteristic. The lesion is very extensive. When a vessel ruptures, not only is the blood-supply of the part of the brain cut off but mechanical damage is done by the blood

extravasating and separating the nerve-fibres and subjecting them to pressure.

Haemorrhage is nearly always associated with arterio-sclerosis or chronic interstitial nephritis. B. P. is high. The systolic pressure may or may not be increased. This condition is very rare in young men.

Syphilitic Endarteritis might be a cause in young people. But it is very unlikely that this by itself without a high B. P. is sufficient to cause Hemiplegia. If there is syphilitic endarteritis and high B. P., then the vessel may give way and there may be haemorrhage.

The next factor to consider is Thrombosis. Here the onset of Hemiplegia is often associated with premonitory symptoms. Numbness of legs or arms lasting for a few hours, is a common premonitory symptom. Thrombosis occurs in a man much older than one in whom haemorrhage occurs. It is not at all common in young people. Factors aiding thrombosis are:—

1. Diseased artery.
2. Low B. P. and feeble heart,
3. Anaemia.

The thrombosis occurs in the majority of cases at night. The patient goes to bed apparently alright. During sleep his heart is doing the least amount of work and it is the optimum condition for thrombosis to occur. The patient wakes up in the morning and finds that he has hemiplegia.

Thrombosis sometimes does occur in young people when they possess very diseased arteries.

The third factor to consider is Embolism.

The common diseases which lead to embolism are *malignant endocarditis, mitral stenosis, and aortic disease.*

Thrombosis may be caused by malarial parasites (malignant tertian variety) blocking up the cerebral arteries.

The case in hand.

Patient had premonitory symptoms for weeks before the attack. No history of trauma. No high B. P. Although fairly extensive lesion, improvement took place under Ayurvedic treatment, probably mercury. The most probable cause is either thrombosis due to syphilitic endarteritis, or haemorrhage into a gumma; the latter being the most likely, as thrombosis of cerebral vessels in a young man even the subject of syphilis is very uncommon, whilst the premonitory symptoms occurring for weeks before the attack, were suggestive of an irritative lesion such as a gummatous tumour; and, sudden haemorrhage into it would give rise to hemiplegia if the gumma was situated in the immediate vicinity of the Internal Capsule. No improvement has taken place during the last two years, and secondary contractions have supervened which indicate destruction of the motor fibres.

Blood has been taken for Wasserman but result is not yet known, but even if negative will not be conclusive as the patient has been undergoing Ayurvedic treatment probably mercury and possibly Pot Iodide, for years. (Wasserman subsequently found to be negative.)

Clinical Lectures II

By Lieut. Col. CROLY, I. M. S.

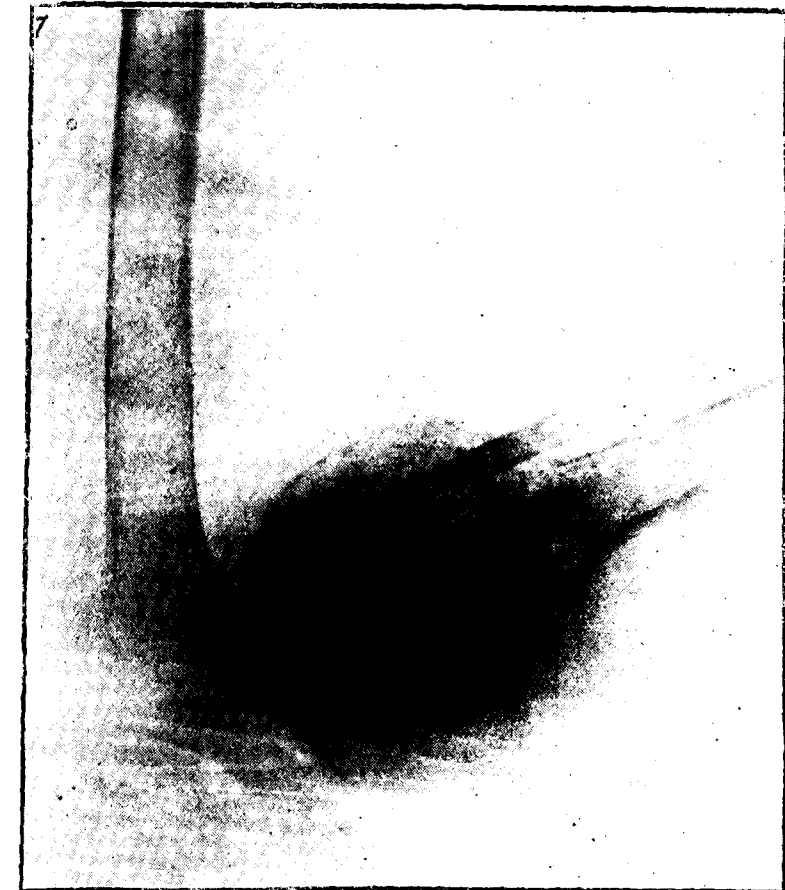
First Surgeon, General Hospital, Madras

A Case of Myeloid Sarcoma

Name... Raghavan; Race... Hindu; Admitted... 8-10-25,
Age... 20; Disease... Myeloid Sarcoma; Duration... 6 months

History. 6 months ago patient struck his knee against a cot. There was slight swelling at the site. Swelling gradually increased to present size.

Local Examination. Swelling about the size of a cocoa-nut. Skin healthy over the part; no dilated vessels. Main part of tumour below the level of the knee-joint, and at the upper and medial part of the tibia. Warm to the feel. No pulsation. Skin free over tumour. Consistency variable; generally soft. Tumour



Radiograph of a case of Myeloid Sarcoma.

sharply defined, with no involvement of surrounding bones the lower end of femur, the patella, and the head of the fibula are not involved. Movements of the joint limited, and kept flexed at 40 degrees. Cannot be extended beyond that without pain. Jarring of the joint-surfaces by tilting at the heels does not elicit pain. Head of the fibula displaced outwards. Muscles of thigh and calf are wasted.

It is evidently not a joint affection. Limitation of movement was due more to the mechanical disability than to any joint trouble. Lower end of femur, patella and upper end of fibula were all clearly marked out. The joint was not swollen, the tumour was apparently growing from the upper end of the tibia.

Diagnosis

1. Acute abscess:-Against this are, the duration, absence of temperature and local signs of inflammation, the feel of it etc.

2. Aneurysm:-No pulsation etc. It is not in the line of an artery.

3. Tumour Tibia:-

- (a) Myeloma,
- (b) Endosteal Sarcoma.
- (c) Periosteal Sarcoma,

X-Ray plate shows the characters of a myeloma. The tumour has grown right through the bone. The joint is free. There is the characteristic stippling of the tumour, and the outline of the tumour is definitely marked out everywhere. The articular cartilage is intact.

The site is also in favour of myeloma. The other common sites are the lower ends of the femur and radius and the upper end of the humerus.

The tumour is locally malignant.

Treatment.

- 1. Scraping and X-Rays.
- 2. Excision.
- 3. Amputation.

Here the tumour was too big for the first two. Amputation is the best treatment.

N. B. In endosteal sarcoma of this size, treatment would probably be useless, as secondary deposits in the viscera would already have occurred. The same applies to periosteal sarcoma.

Pathology

The tumour on section would be of a dark maroon colour bleeding freely due to the great vascularity, and microscopically would show myeloplaxes etc.

In case the tumour had come in when it was considerably smaller than it is now, other conditions would have to be excluded as well.

(1) *Brodie's abscess*. Here history of osteomyelitis. With X Ray picture showing cavity, possibly sequestrum and thickening of bone around as a result of chronic osteo-periostitis.

(2) *Syphilis*. Here antisyphilitic treatment will swiftly cure the condition, history of Syphilis Wassermann reaction &c.

(3) *Tubercle*. X-Ray will show characteristic rarefaction and fluffiness.

(4) *Osteoma and Chondroma*.

(5) *Von Recklinghauser's disease or Osteitis Fibrosa*-Rare condition. Usually generalised. Sometimes localised and cystic in the soft bone. X-Ray shows no stippling etc.

In Myeloma, the growth expands the bone more or less equally. In the early stages thickening of bone. Later on, bone absorbed. Egg-shell crackling may be felt. Spontaneous fracture might result.

A Case of Tumour

RIGHT TEMPORAL REGION

Name.....Pottigadoo
Race.....Hindu.
Admitted.....8-10-25,
Duration.....Since birth, 35 years.
Disease.....Tumour in Right Temporal Region.

Tumour since birth, gradually growing to present size.

Description:-

Inspection. Tumour about the size of a mango, situated over right temporal region. Globular in shape. Skin over tumour normal in appearance.

Palpation. Soft and fluctuating. No pulsation. No warmth. Skin movable over tumour. Tumour irreducible and pressure does not produce convulsions or any signs of cerebral irritation. Tumour does not become tense when patient coughs. Tumour movable over bone. No enlargement of cervical glands.

Differential Diagnosis.

(1) *Dermoid cyst*. The situation of the tumour in this case is in favour of dermoid. Commonest place at outer angle of orbit in situation of upper portion of orbito-nasal cleft. The skull in dermoid may get eroded and slightly depressed beneath the tumour. The X-Ray plate shows this slight depression. This dermoid is soft and fluctuating and not as firm as usual, possibly due to absence of sebaceous glands lining the cavity of the cyst.

(2) *Meningocele*. In middle line. Usually gets tense on coughing or any effort of expiration. Contents can be reduced, but reduction dangerous—may cause convulsions etc.

(3) *Encephalocele or Hydrocephalocele*. No pulsation to suggest these. Further these cases do not survive to such an age as a rule.

(4) *Aneurism*. No pulsation; not in line of large artery etc.

(5) *Abscess.* The tumour is congenital.

Hence the most likely suggestion is that it is a dermoid.

Operation Notes 12-10-25

A definite cyst was found which contained pus; evidently the recent growth and pain was due to infection of the cyst. The pus was evacuated and the cyst wall dissected out.

CASE REPORTS

Two Cases of Anaemia.

(By Captain J. B. VAIDYA, I.M.S.)

I am sending you some short notes on two cases of Pernicious Anaemia which came under my care in Deolali.

I. M.—A Guzerathi lady aged about 24 had sprue in Bombay for four months, after which she began to get very anaemic and had fever off and on. She came to Deolali for a change, and when I saw her, had a lemon-yellow tint with the mucous membranes very pale. There was glossitis, and puffiness of the face, giving her a bloated appearance. There was no diarrhoea or copious stools, but she had anorexia. Blood-films showed anisocytosis with a preponderance of megalocytes, poikilocytosis and nucleated red cells chiefly megalocytes. Unfortunately, blood count and colour index could not be done then owing to lack of apparatus. The patient was put on the following treatment:—

1. HCl dilute—2 drams in a day
2. Yeast—oz 6 to 8 in a day.
3. Haemoplas injections twice a week.
4. Iron and arsenic.

The patient began to improve gradually and to put on weight and colour—After a month I saw her again, and the color index

was below unity, and the nucleated red cells had disappeared. There was a slight anisocytosis. The progress was steady, and during the course of the next month two blood counts showed color index below unity, with no abnormal reds. The patient improved greatly and could take walk, and enjoyed her meals.

II. The second case was that of a young man aged about 21, a student from Bombay. He was operated on for gall stones, and had dysentery. After a few months he developed anaemia, and came down to Deolali. He also had a puffy bloated face, and very pale mucous membranes. There was no rise of temperature or anorexia. But he used to get vomiting at long intervals. His color index was higher than 1. There was a good deal of anisocytosis with megalocytes and poikilocytes. Nucleated red cells were present. There was no diarrhoea or history of sprue.

He was put on the same treatment as case No. I., but, in addition, was given Novarsenobillon 0.2 grm over a week intravenously. In the first three weeks he showed good progress and put on weight, but later on he lost weight. He then went to Bombay and wrote to me to say that he was having the same treatment, and had begun to improve and put on weight again.

The treatment of these cases became interesting on the publication in the B. M. J. of July 1925 of an article on Sanguinin, a product obtained by fractional precipitation from ox blood. This when injected in cases of P. A. caused an increase in the total count of red cells and a slight improvement in the general condition. In the case that improved, Haemoplas, a preparation of sheep's blood, was given, and one might probably infer that the good effects obtained was due to the Sanguinin contained in it. It is difficult to say whether this improvement is permanent, or is only a phase of remission. The cases will have to be observed for a length of time. But in view of the article on Sanguinin published in the B. M. J., it becomes rather an interesting point as to whether the improvement might be due to Sanguinin contained in Haemoplas, a preparation from sheep's

blood. Sanguinin was obtained by fractional precipitation from ox blood, and on injection increased the red cell content and improved the general condition in P. A. cases. Two solitary cases are not enough to deduce anything, but I am writing with a hope that this may attract some further correspondence on the subject.

From S₃ Wards

Traumatic Effusion into the Lesser Sac of Peritoneum

A patient named Seetha Erikil Ayya aged 50 was admitted on 29th August 1925. at 12 noon as an urgent case with a tender painful fluctuating swelling in the epigastrium and with a history of being runover by a cart, the wheel passing over his epigastrium. Bowels were regular and there was no vomiting or fever; excepting over this area there was no rigidity of abdominal muscles. Percussion elicited a dull note and as the dullness was continuous with the lower edge of liver dullness and as the swelling appeared to arise in connection with the left lobe of the liver, the possibility of a liver abscess pointing in the epigastrium was thought of even though there was no history of previous dysentery and other symptoms were absent. A laparotomy was immediately performed and on opening the abdomen the anterior surface of the stomach presented itself in the wound and was found firmly stretched over a cystic tumour underneath and fixed all round to the anterior abdominal wall by omental adhesions above and below; the liver was found to be distinctly pushed upward; and the condition was therefore thought to be one of subphrenic abscess; as there was however no access to the swelling excepting through the stomach or cutting through the gastrocolic omentum below or the gastrohepatic omentum above and as either of these procedures would have entailed a risk of infecting the general peritoneal cavity (all along being under the impression that it was an abscess), it was thought advisable to tackle it from behind or the flank and so the abdomen

was closed. The patient was subsequently explored on 12-9-25 from the right flank through the eleventh inter-costal space in the mid-axillary line and about 67 ounces of blood stained fluid was withdrawn with great relief of symptoms. Since then the patient has been aspirated three times (as often as it refilled); but the patient has been steadily getting weaker and weaker and the idea of opening and draining it could not be entertained as the patient's general condition will not permit it.

The fluid sent to the bio-chemist has been reported on as follows;—

- “ 1. Reaction :—Markedly alkaline
- “ 2. Presence of :—Lipase—positive marked
Rennin—positive.
Amylopsin—not marked.
Bile-salts—negative,
Bile pigment—negative.
Cholesterol—negative.

The fluid appears to contain pancreatic secretion (not liver)."

The condition is therefore due to the application of blunt violence to the central area of the upper part of the abdomen, causing tearing of the peritoneum lining the lesser sac and bruising of the pancreas behind, giving rise to distension of the lesser sac with a serous blood stained exudate and showing evidence of leakage from the pancreas.

The patient died on 18th October 1925.

Published by kind permission of Dr. Rengachariar, M.B. C.M., K. Sabesan, A. S₃.

From S₁ Wards.

A Case of Surgical Emphysema

Venkatesan, a street sweeper, aged about 60 years was admitted on the 8th October in the General Hospital, Madras, into the first surgeon's wards, for diffuse swelling of the body

from the head down to about the upper third of the thighs, with unconsciousness of 2 days duration.

No history of the present illness could be obtained from the patient as he was unconscious. His friends who accompanied him told us, however, that he returned home the previous evening quite drunk and he went to sleep soon after returning. The present swelling was noticed by the friends while he was sleeping. The patient did not come round from his unconscious state.

Condition on Admission : The patient was brought in an unconscious condition and he could not be aroused by noise. The patient looked bloated. The skin was cold to touch but no perspiration.

Pulse : 72 per min : fairly strong and regular :

Resp : 32 per min : Stertorous breathing :

Temp : 96° F : breath rather foul smelling—no smell of alcohol

No vomiting nor any convulsions

Pupils : normal in size : equal on both sides. No reaction to light on the right side and only sluggish reaction on the left side.

Complete paralysis is of muscles of limbs and face and involuntary passage of urine and faeces—knee jerks and Babinsk's signs could not be elicited.

Local condition : There was a diffuse swelling present from the scalp down to about the upper third of the thighs, the penis and scrotum being also involved. The swelling was well marked over the neck and chest : The swelling, situated in the subcutaneous tissue, was soft, elastic, ill defined, pitting on pressure and crepitant, refilling slowly on removing the pressure. It was resonant on superficial percussion and had been gradually increasing. Abdominal muscles were rather rigid.

Only a few bruises were noted here and there on the right side. One bruise was noted on the posterior aspect of the right shoulder and another on the outer side of the lateral condyle of the right humerus.

No haemorrhage seen under the conjunctiva nor any sign of bleeding or clear discharges from ear, nose or mouth. No localised collection of blood in the subcutaneous tissue.

Due to extensive swelling, the body especially over the chest, no definite fracture of ribs or skull could be elicited in the bedside.

Respiratory murmur was audible over the chest and no sign of cyanosis.

Heart sounds muffled by a crackling noise made when the stethoscope was placed over the emphysema.

Urine drawn by a catheter and it revealed on examination only slight albumin. No deposit and no sugar.

Stomach wash was done and its contents sent to the Biochemist for analysis : The report of the Biochemist received on the 9th was that the stomach contents were markedly and abnormally acid. Tests for alcohol, blood, nicotine and caffeine proved negative, Bile was present : Test for morphia was positive.

Probable diagnosis. Fracture of the ribs and cerebral haemorrhage.

x-ray ribs and Skull taken :

X-ray report :—The Skiagram which was taken in the only position possible under the circumstances as the patient was in a comatose condition and any slightest movement might endanger life by causing air-embolism, did not reveal any definite evidence of fracture of ribs. The presence of air in the subcutaneous tissues was however visible clearly all round the chest especially in the neck involving also the scalp. Even clinically the

condition did not permit any thorough examination to elucidate the condition of the ribs.

Progress and Treatment.—

8-10-25: Brandy dms 2 given every 2 hours. No feeds could be given as the patient was unable to swallow. Urine was once passed in bed that night: That night temperature rose up to 101° F.

9-10-25: T 103° F. Pulse 136. Resp. 48 and stertorous in character. The patient perspired once freely. Pupils were unequal. Brandy was continued.

10-10-25: T. 104° F Pulse 136 Resp. 48 and Stertorous breathing.

The *general condition* of the patient was worse and the swelling had increased: He died at 12-45 noon.

Post-Mortem examination was done on the body and revealed the following:—On opening into the chest the second rib, on the right side was fractured, half an inch external to costo-chondral junction and at the same place there was an opening into the pleural cavity through which a finger could be passed. Third to the eighth ribs, both included, on the right side were fractured along an imaginary line drawn from the inner third of the clavicle to the right iliac crest.

No free fluid in the pleural cavities: There was a small superficial tear half an inch long about the middle of the anterior surface of the upper lobe of the right lung: Sections of the lungs were moist and friable and decomposed.

Heart was flabby and its muscle degenerated. Its cavities empty. There were a few patches of atheroma at the commencement of aorta.

Liver:—Pale and friable on section. Lobular markings indistinct.

Kidneys:—Both were Cystic.

Scalp:—The muscles above the right ear showed ecchymosis on removing the skin.

Skull:—On opening into the cranial cavity there was extensive subdural haemorrhage opposite the right hemisphere and part of the left; and also opposite the base on the right side. Ventricles were empty. No haemorrhage into the substance of the brain.

I am indebted to Lt. Col. R. G. G. Croly, M.B., B.Ch., I.M.S. for permission to publish these notes.

P. S. Natesan.

CORRESPONDENCE

Mr. C. Paparow, L. M. P.; M. C. P. S., D. Vet. Sc., Medical Practitioner, Vizianagaram, criticising the article on "Appendicitis" by Dr. S. P. Sarma that appeared in our previous issue, quotes E. W. Andrews M. D. from the Med. Ann. 1917 (P. 93) thus:—

"In physiology it is to be noted that the musculature of the appendicular region acts with that of the appendix to insure peristalsis. The walls of the appendix secrete lytic and amylolytic ferments. There is also an internal secretion of hormones which stimulates peristalsis when injected into rabbits. It is to be concluded that the appendix is a specialised part of the caecum with a definite peristaltic and sphincteric action."

Government Medical College, Madras ANNUAL PRIZE DISTRIBUTION 1925.

The Principal's Report.

The 90th Session of the Madras Medical College commenced on the 2nd July 1924 and terminated on the 31st March 1925, and this report deals both with that period and up to the commencement of the present session on July 2nd 1925.

The total number of students in the College was 593. Of this number, 484 were regular students and the remaining 109 were undergoing special courses. The applications for admission to the College Dpt., are decreasing yearly, being 251 in 1923, 204 in 1924 and only 140 in 1925. This reduction in the applications for admission is probably not due so much to the establishment of a Medical College at Vizagapatam, as to the fact that the prospects after qualification are not as bright as formerly, few doctors being taken into Government Service, whilst Medical graduates in the Mofussil find they can barely make a living. It is possible also that the enhanced College fees introduced last year have had some effect in diminishing the number of applicants, but whatever the causes, if the decrease continues at the same rate, there will not be enough applicants to fill the vacancies in 1926.

The students attending the College are divided into the following groups:—

(i) The Assistant Surgeon Department:—Composed of Military students for whom this College was originally founded, and of women Apothecary students, but new admissions to this latter class have been discontinued since July 1920.

(ii) The College Department consisting of 447 students studying for the Medical Degrees of the University of Madras. A total however of 559 College students sat for the various examinations, the First, Second, Third and Final M.B.B.S., or L.M.S., during the year, and 231 or 41.3 per cent passed.

(iii) The Sanitary Inspectors' Training Class. There were 58 students in this class of whom 54 appeared for the Government Technical Examinations; 44 passed in Physiology (7 in the first class) and 48 in Hygiene, six being placed in the First Class. In addition, 23 Health Inspectors in Government Service and 20 Sanitary Inspectors underwent quinquennial training in Advanced Hygiene and Minor Sanitary Engineering.

(iv) The Health Officers' Class. Four Medical graduates and two Licensed Medical practitioners joined this class and all were found qualified to hold appointments as Medical Officers of Health and granted certificates, whilst three of the four Medical graduates also obtained the B.S.Sc. Degree of the University of Madras.

(v) The Chemist and Druggist Class contained only two students. This class still remains unpopular, the openings for well-qualified chemists and druggists being very few in this Presidency.

Lady Students

There were 57 Lady Students on the College rolls during the year, of whom 38 were University students and 19 belonged to the Apothecary Class. Of these students, 13 were Europeans or Anglo-Indians, 31 Indian Christians, 6 Brahmins and 7 Non-Brahmins.

Athletics

In Athletics, the College has, as usual, done well. The 'Penny-critch Cricket Shield,' 'The Inter-Collegiate Hockey Cup,' and 'The Travancore Sports Trophy' again having been won this year. The Medical College Company, B Company of the Madras University Training Corps, has also acquitted itself very creditably winning the 'Company Cup', the 'Rajah Raghava Varma Cup', and the Section Competition in the Miniature Range Competition. The College Company also won the Cup for the best long range average during the year, and the 'Company Drill Cup', whilst one of our Non-Commissioned Officers won the Cup for the best individual shot in the battalion. The Company has, however, lost its Commanding Officer Lieutenant S. Luther, who has resigned from Government Service and has taken an appointment in the Malay States. To Lieut Luther's keenness and energy the Company owes a great deal of its success, and his loss will be keenly felt. Captain M. G. Kini, M. C., has been appointed to succeed Lieut Luther and under

his command the Company will I am sure maintain its reputation.

The College for several years past has been severely handicapped by uncertainty as to whether a new General Hospital and with it a new Medical College is or is not to be erected and if erected where it will be located. This question has been under consideration for more than twelve years with the result that except the Biology Laboratory, no new building has been constructed during this period and no modern improvements to the College have been carried out. In spite of this, however, admissions to the College have increased to 100 annually since the year 1918. The result is that the present buildings are some of them quite inadequate not only in accommodation but in design and equipment for the number of students they have to accommodate and for the highly specialised modern teaching of to-day, and it will be very shortly, indeed it is now, absolutely essential to erect new buildings for such departments as Pathology and Bio-Chemistry and to extend or reorganise certain other departments. Under the circumstances, it is perhaps not surprising that for the last four years there has been a progressive decrease in the total percentage of passes at the combined University Examinations, e.g., the First, Second, Third and Final M.B.B.S., and the L M S, until they reached the very low figure of 41.3 per cent last year, which is certainly the lowest percentage of passes for many years, if not the lowest on record.

There is still no Hostel for the College in spite of frequent representations urging the necessity for one, but the erection of a hostel like that of other buildings must await the decision regarding the construction and location of a new Hospital and Medical College.

Important changes are being made in the Medical curriculum. The Academic Council of the Madras University has within the last few weeks accepted the new Regulations. These Regulations require all students before registration as Medical students to have passed an examination in Chemistry and Physics.

They also incorporate the teaching of Bio-Chemistry in the curriculum and introduce alterations in some of the Examinations mainly with a view to increasing the efficiency of the early scientific training.

The Academic Council has also decided to abolish the L. M. S. Degree, and this if ratified by the Senate, will have a far-reaching effect upon the future students of this College; for, those who fail to obtain the M. B. B. S. degree will either have to discontinue their medical studies or have to fall back upon the diploma of L. M. P. since I understand, the Government are not prepared to consider the founding of a College of Physicians and Surgeons. When it is realised that little more than 50% of the students who enter this College obtain the M. B. B. S. Degree, the importance of the Academic Council's decision to abolish the L. M. S., at once becomes manifest.

During the year a past student of this College obtained the Ph. D., Edinburgh. Two obtained the F. R. C. S., Edinburgh and one the M. D., Madras University. Several former students have returned to this Presidency as members of the I. M. S., and others are holding Professorships in the College. In the past, the students of the Medical College, Madras, have been conspicuously successful, and in conclusion, therefore, I trust that in spite of the cost which must of necessity be heavy, when the vexed question of a new General Hospital and Medical College has at last been decided, every endeavour will be made to bring this College once again up to date, and to maintain the traditions of the past.

MEDICAL COLLEGE, } (Sd.) F. F. ELWES,
21st May, 1925. } Lieut. Col. M. D. I. M. S.,

Chairman's Speech

Col. Elwes, Ladies and Gentlemen,—I never visit a hospital or a medical college without feeling impressed and sometimes depressed with the contrast between the nature of such a profession as mine and such a profession as yours.

Medicine a Progressive Science

Medicine is not an exact science, but it is however empirical, a pre-eminently progressive science and it is also closely allied to and duly derives fresh methods and fresh stimulus from other sciences. I had the good fortune the other day to come across an article by Sir Humphrey Robston summing up the progress of medicine during the last century and under its guidance I propose just briefly to remind you of a few of the most striking advances made in your science during that period.

Lewis Pasteur

It is characteristic of the close relation of medicine to other sciences that the greatest in the period is that not of a medical man but of a chemist Lewis Pasteur and the great revolution that he effected both in medicine and surgery was due not to clinical observations but laboratory work. He demonstrated the fallacy of the supposed spontaneous generation of bacteria and the means of preventing infection from without and revolutionised the scope of surgery. Pasteur was born almost exactly a hundred years ago (1822-1896) and hand in hand with antiseptics went the discovery of anaesthesia which was made as recently as 1847, the discoverer being Sir James Y. Simpson. But Pasteur's discovery has led to at least as great a revolution in the practice of medicine as in the practice of surgery, for it led to the discovery of the causes of many diseases and of the use of prophylactic and curative inoculation on a large scale. Antitoxins are now the recognised cure of diphtheria, and Pasteur himself discovered the vaccine which cures hydrophobia as he also discovered prophylactic treatment for the prevention of anthrax in sheep and cattle and so consequently minimise the risk of that terrible disease spreading to mankind. Not the least field in which bacteriology had advanced is that of tropical medicine. The malarial parasite was observed in the blood for the first time in 1880 but it was not until 1897 that the researches of Sir Ronald Ross made in this very Presidency completely proved that it was introduced into human blood by a carrier mosquito—indeed it was the biological examination of tropical diseases that made the general theory of animals as disease-carriers long suspected but only

proved as recently as I have said. The flea, the house-fly, the tsetse fly and the louse have also been proved to be carriers. As soon as this was known, many diseases such as yellow fever in tropical America carried by another species of mosquito have been practically stamped out. The discovery of parasite of tuberculosis and syphilis in 1882 and 1905 respectively has enabled great improvements to be made if we can say so in the treatment of these diseases.

Bio-Chemistry

Bio-chemistry is a new science as well as a new name and has already shown that medicine has much to expect from the development of chemical analysis of the blood and secretion of various organs of the body. Addison's discovery in 1885 of the disease called by his name led to the study of the adrenal gland and this secretion by adrenalectomy which for many years has been successfully made synthetically has much use in modern medical practice. It is only a few years since the discovery was made that the administration of small doses of iodine compensates for the deficiency of that substance produced by the thyroid gland and can practically eliminate goitre. In a country where diabetes is so common as India, it was a happy day when in 1921 a satisfactory preparation of insulin was discovered to supply the deficiency of that substance in the pancreas. It is too early to say how wide-reaching the effect of this treatment is going to be, but it has already proved its efficiency in saving and prolonging life.

Optics Applied to Science

The application of the science of optics has made ophthalmics practically to be an exact science, for it was by the application of the laws of optics that the ophthalmoscope was invented, which not only made an enormous increase in the cure of errors of refraction of eyesight but it has been used with valuable results as a means of diagnosis in general clinical medicine.

X-Rays

The X Rays as they are called were discovered by Prof. Röntgen as recently as December 1895 and Radiography is used

not merely for the detection of foreign substances in the body but also in many diseases such as tuberculosis and abdominal disease. Bismuth and barium are opaque to X Rays and their progress through the internal organs can be recorded. Similarly diseases of the roots of the teeth can be detected when there are no symptoms of dental poisoning. Besides, by use of the X. Rays both they and the rays obtained from radium have been extensively used for the destruction of malignant growths in the body. To show what progress we have made, you may take the lesson from much less complicated discovery than those I have already referred to.

Nursing

The science of sick nursing was the outcome of the Crimean War in 1852, and the common clinical thermometer which is in everybody's hands to day was invented by Sir Clifford Albutt who only died in February of this year. Sir George Dickinson said a year or so ago in his presidential address to the college of Physicians, that a study of clinical, and surgical methods of hundred years back left one uncertain whether to be more astonished at the temerity of the practitioners or the tenacity of life exhibited by their patients. (Applause.) This great extension of the field of Medicine and its inter-dependence on other sciences demands a great increase in the number of workers in all its branches and the number of scientific appliances for the Purpose of both research and therapeutics. The development of the science of immunology, to use the barbarous word coined, I believe by Sir A. Wright, has also vastly increased the number of patients with whom your science can successfully hope to deal. And this means not merely more workers and more appliances but more space.

Conclusion

All this involves money, more hospitals, more colleges, more teachers, and in this country it is not reasonable to look to any other sources of money but the State. I am sorry to learn that the State has been niggardly in past years in this Presidency in supplying your needs. When you go into the world, you will not merely be trained doctors and surgeons, but you will be citi-

zens with voice in public affairs and I trust you will use that voice to impress upon the public that there is no way, in which the activities of the State can be more beneficially employed than subsidising the methods whereby disease is combated and the national health improved.

List of Prize Winners, etc.

The Madras Medical College Council have awarded the undermentioned distinctions on the students specified for the Session 1924-1925.

Medal

The Johnstone Gold Medal	K. V. Vencataraman
The Blacklock Gold Medal	W. Pinto
The Chipperfield Gold Medal	S. K. Sundaram
The Bharati Lakshmi Gold Medal	Miss B. Bhadrappa
The Raja Sir S. Ramaswamy Mdr. Gold Medal	K. V. Vencataraman
The Savalai Sethuram Gold Medal	M. Narasimha Pai
The Lady Grant Duff Gold Medal	Miss B. Bhadrappa
The Dr. G. Rama Rao Gold Medal	V. R. Thayumanavaswami

Prizes

The Bannerman Prize	T. K. Seshadri
The George Smith Prize	M. K. Krishna Menon
The Mc. Nally Prize	M. K. Krishna Menon
The Price Memorial Prize	K. Surianarayana
The Allan Ewan Grant Prize	V. Srinivasan
The C. Raitt Dunhill Prize	K. G. Krishnaswami
The Thomson Memorial Prize	C. K. Padmanabha Menon
The First Sibthorpe Prize	V. Srinivasan

Prizes

The Second Sibthorpe Prize	R. Mahadevan
The Branfoot Prize	M. Narasimha Pai
The Maitland Prize	K. V. Venkataraman
The Vangeyzel Prize	M. Sitarama Rau
The Sita Bhai Prize	Miss A. Swamidoss

Certificate of Honour**FINAL YEAR.**

1st in Dental Surgery	T. A. Sundaram
2nd in Dental Surgery	B. Govindaraj Shenai
3rd in Dental Surgery	P. S. Kuppuswami

FOURTH YEAR.

1st in Medicine	K. Suryanarayana
1st in Medicine	V. Srinivasan
3rd in Medicine	V. K. Narayana Menon
1st in Midwifery	M. Krishnamurthi
1st in Surgery	V. Srinivasan
2nd in Surgery	R. Mahadavan
3rd in Surgery	B. Mukunda Rao
4th in Surgery	T. K. Seshadri

THIRD YEAR.

1st in Pathology	K. Bappu
1st in Pathology	P. Ratnaswami
3rd in Pathology	Miss S. Madhaviah
1st in Minor Surgery	Miss S. Madhaviah

SECOND YEAR.

1st in Organic Chemistry	R. Nagendran
1st in Anatomy	T. D. Venkatakrishnan
2nd in Anatomy	V. R. Thayumanavaswami
3rd in Anatomy	A. Umapathi
4th in Anatomy	V. Srinivasan
4th in Physiology	K. G. Krishnaswami
2nd in Physiology	S. Pichumani
2nd in Physiology	V. R. Thayumanavaswami

SECOND YEAR.

1st in Physiology	Miss D. M. Satur
1st in Biochemistry	K. G. Krishnaswami
1st in Materia Medica	K. Bhimeswara Rao
2nd in Materia Medica	K. G. Krishnaswami

FIRST YEAR.

1st in Osteology	T. Lakshminarayana
2nd in Osteology	W. E. Martinus
1st in Biology	M. Sitarama Rao
2nd in Inorganic Chemistry	M. Sitarama Rao
1st in Physics & 1st in Inorganic Chemistry	P. Govinda Rao
2nd in Physics	C. Srinivasan
3rd in Physics	P. K. Oommen

The Medical College Association**Report of the Inaugural Meeting on Friday
7th August 1925 at 5 p. m.**

Speaker—Major K. G. Pandalai, F. R. C. S., I. M. S.

Subject—"Medical Studies and Foreign Travel"

Chairman—Dr. A. Lakshmanaswami Mudaliar, B.A., M.D.

The Hall was full long before the appointed hour. Many of the Assistant Professors were present. Seven lady students also attended—a rather unusual thing in the history of the Association.

The Secretary voted Dr. Lakshmanaswami Mudaliar to the Chair amidst great applause.

The President after a short, but very entertaining, opening speech, called upon Major Pandalai to move the following resolutions:—

(i) The students of all the five years pay an annual subscription of Re. 1 each towards the Association.

(ii) All the students of the third, fourth and final years pay an annual fee of Rs. 2 each towards the Magazine, this being optional for the first and second years.

(iii) That both these fees be paid up at the College Office before obtaining tickets of admission into the classes.

(iv) That students who have taken magazines last year, but have not paid up their subscriptions, should pay at the reduced rate of Re. 1 for the year before the 15th August. As for those that have paid already, at the rate of Rs. 2, Re. 1 may be credited to this year's account.

Major Pandalai in moving these resolutions emphasised the fact that it was a point of honour for the students to see that the Association and Magazine affairs were placed on a sound basis.

The President invited a discussion over the resolutions. Mr. Hanumantha Rao, and Mr. Kuppuswamy opposed the resolutions. Mr. V. Chokkalingam moved an amendment to Resolution (ii) saying that the Magazine fees should be made compulsory for the first and second years as well. The amendment was put to vote and lost.

The main resolutions were next put to vote and carried by an overwhelming majority, not more than four or five opposing.

It was nearly 6 p. m. by the time this business was carried through.

The President then passed to the main item of the day—calling upon Major Pandalai to deliver his address on

“ Medical Studies and Foreign Travel.”

The audience listened with rapt attention to his very instructive lecture. (A short account of it is given below). The lecturer spoke for about an hour and a half, the meeting dispersing at 7-45 p. m.

Major Pandalai began by saying that he had long wanted to speak on this subject. Nowadays, going to England or America for purposes of study had become quite common but it was not at all so in his days—about eighteen years ago. It was rare, then, for a Madras Student to go over to England to pursue his Medical studies. The pioneers in this direction were the Bengalis and Bombaites. Madras followed suit as it did in every other branch of study.

During those early days there were very few Indian Medical students working in the British Hospitals; and the great masters had the opportunity of getting into close personal touch with them and impart some of their vast knowledge gained by years of experience. But now the condition was different. Every English Hospital had been flooded with students, and the proportion of Indians had become so great that the former close contact could no longer be had. But there was one good system there that we could imitate with great advantage—and that was the system of coaching. Every institution there had a number of young doctors who made it a profession to coach up students through a certain course of study within a short time. Of course they were well paid for their trouble, and they richly deserved it. Without such a coaching it was practically impossible for any student to get through his examination merely by attending the general lectures.

The speaker then drew the attention of the audience to another important fact that owing to the language difficulty most of the students who go abroad went to the British Isles, or to America. This was a regrettable fact. Instruction given in the various institutions on the continent was in no way inferior to that given in the English speaking countries; in many places it was superior. He was glad that more people are now going to France, Germany and Austria after having surmounted the language difficulty.

The next point the speaker raised was a very important one, a point to be pondered over by every aspirant to a foreign degree.

He pertinently raised the question—Was it worth while spending thousands of rupees and so much valuable time just for the sake of a common degree which one could easily have got by a little more exertion at home? He would emphatically say no. To the man in the street an English degree was in no way superior to the ones at home. To him there was no difference between the England returned man and the L. M. P. next door. Both were doctors practising Western Medicine. In only one case could he find an excuse for going abroad and that was to specialise in a particular branch of study; not specialising in Medicine or Surgery for that was impossible, but specialising in such branches of these vast subjects as Cardiology, Neurology, Surgery of the Ear, Nose and Throat etc. We were badly in want of such specialists though we were in no dearth of good general physicians and surgeons.

The speaker then drew the attention of the audience to a shameful state of affairs existing at present. This was the importation of foreign drugs and surgical appliances. India was now losing crores of rupees on this account. If only some of our enterprising young men started manufacturing drugs and instruments, so much money would be saved to India. After all it was not a very difficult job, and our young men ought to be able to do it. He hoped his advice on this point would be deeply pondered over by the richer class of students, and that they would make an effort to stop this drainage on India's resources.

The speaker concluded his instructive address by exhorting the students to think deeply over all that he had said, and do their best to their country not only by practising the noblest of all professions but also by developing the Industrial aspect of it as well.

Graduates Entertainment

(By V. SRINIVASAN)

The Madras Medical College Association was 'At Home' to the new graduates of the year on August 21st at 5 p. m. The whole college was *en fete* and the premises were tastefully decorated for the occasion. The proceedings began with lunch served in the garden. Though at first it seemed as though the weather would spoil the whole show, yet it proved kind and the function proceeded smoothly. A new feature this year was the common catering for Professors, Graduates and students. This was appreciated by all.

After lunch, the gathering adjourned to the Library hall where the Graduates were given an ovation by their fellow medicoes. Lt. Col. Elwes, the President of the gathering, welcomed the graduates in a short, but impressive speech, and exhorted them to carry throughout their lives the high traditions and ideals of the college. Suitable and interesting replies were given by Miss Dunlop and Mr. Venkataraman on behalf of the graduates.

After this, an interesting programme of variety entertainment was gone through. Particularly amusing were the comic recitations of Miss. Cama and Mr. V. R. Kamath. The combination of Veena and Flute by Messrs. Rangachar and Sundararajan was appreciated very much. The entertainment came to a close with the singing in Chorus of Dr. Tagore's "National Song"—the audience standing the while.

A vote of thanks was then proposed to the President, Lt. Col. Elwes, and was responded to heartily by those present. The President, while thanking the audience congratulated the Secretary for his able get-up of the whole function.

The function came to a close with the playing of the National Anthem by the College Orchestra.

Random Notes

It has been gazetted that Col. Elwes is going on long leave (18 months and 23 days) from October 28th 1925. The announcement has been a most unpleasant surprise to all of us. Ever smiling, constantly willing to do his best for the students—whether it is getting the Government to reasonably exempt certain students from paying the enhanced fees, or fighting the Vice-Chancellor for an October to October course, or agitating in season and out for a college hostel, always lenient, with his overwhelming kindness never refusing the College Association any demands on his time, energy or support, Col. Elwes has made himself extremely popular with the students. Fourth and Final year students will badly miss his medicine lectures, so valuable and so interesting with anecdotes full of humour and life. A charming personality who ruled without the rod, who inspired admiration (but no awe!) will be away from us for a long time to come; God grant us the gratitude to always remember his efforts on our behalf.

I believe we alone are content to look up only to our classical text books for all our knowledge of the healing art. I wonder why we should be so totally regardless of the great changes and discoveries that are taking place daily. The lawyer who has not many briefs and who spends an hour with any newspaper gets to know of some very recent developments in medicine or surgery, while we who study only the text books and do not care to read a mere newspaper prefer to be more ignorant of our science than a lay man. The college should certainly provide for our keeping pace with the times by placing on one of the tables in the Library all the latest medical journals. Should the college not find it possible to carry out this very reasonable and urgent request, the Association at least should do it and so increase its sphere of usefulness to its members.

We thank the principal for kindly consenting to the installation of an Indian refreshment room within the college pre-

mises. We hope the caterers (who, we learn, will be the National Restaurant) will provide us with clean and good articles so that we need no longer compromise our hygienic principles to satisfy our irrepressible hunger.

We are now in the midst of the October exams. The number of failures in medical examinations has of recent years swollen in a shocking manner and has even been advanced as one of the causes for the small number of applications for admission this year. We shall not attempt to apportion the blame for the bad results; we only hope that the October results will more than compensate for the April tragedies.

IN LIGHTER VEIN False Alarms

By A LADY STUDENT.

The maiden hard and stern of mien,
Her weapon poised; its edge so keen
Flashed in the sunlight, as between
The rows of Freshers down she passed.
On her they looks of terror cast
Pale-eyed and trembling soft they cried.
"What means the Amazon! oh, why
Doth she thus grasp yon fearful blade?
Cruel her eye is, tho' arrayed
In woman's garb," not unafraid
They marked her progress to that room
Whose portals wore an air of gloom,
"Were it well the ruling Gods to call!"
One has forthwith left the hall!
'Ware of the danger, yet impelled
Like bird by serpent, fast they swelled
About the entrance; tense they held
Their breath Horror and rage upswelled

Within their breasts as mute they gazed
Upon the wretch—Her knife she raised,
Then on the corpse with trained precision
She made an excellent incision!

JOKES

Dr Borem took Miss Gushing in to dinner.

"So you write poems, doctor?" she said.

"A little-a little; just to kill time," he replied.

"Why?" asked the lady "Have you no patients?"

* * * * *
Teacher; "Why, Ramu, is it true that your mother has small
pox?" Ramu: "yes, sir"

"But don't you know you mustn't come to school? You might
get it from your mother and then give it to the whole class."

"No, sir; it is only my step mother, and she never gives me
anything!"

* * * * *
The innocent pedestrian woke up in hospital to find the
resident surgeon bending over him. "It's all right, my man," said
the doctor soothingly "you were knocked down by a motor car,
but you will recover all right" "That's good," said the patient
feebly. "I hope it was a Rolls.....you can recover most from
their owners."

Patients

"By The Author of 'Inaugural Strutting's.'"

Patients Ah! how they try ones patience!

Every student thinks he has too many of them. But once
he has passed out with his degree his song takes another tune,
and it is the scarcity of Patients that constitutes the chorus.
Poor young Doctor! and it is not in all of us to turn out a
detective fiction writer or a bishop of Rangoon, either.

The inmates of a hospital belong, perhaps, to as many
classes of patient as there are beds in the institution. To
attempt at a clinical classification were a never-ending job. But

here we shall consider a few leading types. These, I dare say,
shall be sufficient to feed you up. I speak from experience. I
am fed up with them.

First, let us take the most pleasant type. He hails you with
a broad smile and a loud good morning and politely enquires
whether you will examine him.

You ponder over it for a while. Perhaps you are busy;
perhaps you are in a hurry; you think you won't just then and so
you tell him. "It's all right," he says and proceeds to request you
to change his bread and milk diet into a more 'palatable sort of
grub.' "Eggs, cutlets and the like, you know!" he says, "Ever
since a boy," says he "I have never liked bread; it never agrees
with my constitution"—A queer constitution, that of his! you
mutter. At last you disengage yourself from this *alimentary*
type and pass on to your next patient.

What a contrast to his polite, polished, predecessor! This
one turns his face to the other side, as you hesitatingly
approach him you are a little put out by his lateral movement,
but you remind yourself that a doctor should put up with all that
and much more, and not mind it at all. So you draw nearer
apparently unconscious of your patient's movement, who repels
you like a like-pole further by being deaf to your morning
salutation.

"He is deaf perhaps," you mentally remark, and make up
your mind to have a go at him with an auroscope.

"How are you, my dear Sir!" You manage to say. The
only response is a savage grunt—such a one as a cannibal may
well envy.

"How are you to-day" you bawl out at the top of your voice.

There is no answer from your patient; but some one else
jumps up from his bed a few feet off, and vigorously massaging
his eyes with his knuckles, frowns at you across a couple of
beds. Funny time to sleep! you remark.

But you must do something for your case; you proceed to unbutton his shirt, as gently but firmly as you could. But, with a grip astonishing firm for a sick man, the patient coolly sets your hand aside and says.

"It is all right man, Don't you bother!"

You are not of the sort who bother after being asked not to; you walk stiffly off: but not without launching out "If you are all right, why then are you here?"

Luckily you are out of hearing. Luckily ladies too are out of hearing.

Your third case is in the Sheds—that convenient receptacle for uncomplaining patients. He knows only vernacular and that too not much to speak of while on your part, you can't ask certain technical questions in his language. You hope to learn it someday and looking around to see that no house surgeon or higher posts are looking your way you slip off.

With a feeling of relief you approach your next patient—or rather his bed, for he is not there. Taking a saunter, possibly, you think. Such saunters are good for a patient's health—and also for a medical student in charge of the case. If any one finds fault with you of being negligent, well you say, "He was not 'in' when I came round Sir!" This is the *circulatory* type of patients.

Next you come to him whom you and your friends have christened the "Rattle Snake" To be better understood one can call him a chatter box; but that were a *benign* type while all patients in general, and this one we are just now considering are *malignant* to the extreme. He talks and talks now complaining of the ward boys, now abusing the nurses till you and your friends whom you have invited there to hear him talk, grow sick, and walk off.

The next one is a chronic case. You just turn his side, halt half a moment and walk off. His improvement is kathetometric: Such inexperienced hands as yours cannot detect them.

"Hullo! what has happened to No. 15?" "e came 'ere' est'aday eev'nin' stayed the night, and in the early mawnin' we mist 'im" says the nurse. An *acute* case; that is what it is. No sooner come than gone.

The next case too has gone off: But on a little thinking you remember he was no case to walk away like that: with his puffed out limbs and bloated belly, rapid heart and heavily laboured respiration—No that can't be. His case sheet too is gone.

Ah! yes. He has "gone off" certainly. But where? The medical mind ponders, equally perplexed as that of the pseudo-maniacal prince of Denmark.

Such are some of the numerous types of patients to be met with. We have chosen to be amongst them—you and I; at least till we clear out of this college—I hope after that too. So is it not better we bear with them?

Oh! My Brother In-Law!

"I really don't know what to do with Kitti," my sister told me, "I *Cannot* persuade him to give his mind a rest. He works nearly the whole day; he reads only medical journals, and he talks nothing but his operations. I am getting seriously alarmed about him."

In former days Kitti, my class mate (now my brother-in-law) was a fellow easy to entertain, with an observant eye and a delightful disposition. He had always a method of introducing similies, very aptly, from medical subjects into his every day affairs which used to amuse us all very much. He was not particularly rich and once while entertaining his friends at a considerable expense, one of us bluntly asked how it happened that he was so liberal. He replied that it was a case of "Terminal Leucocytosis." Once he said that the line joining the Great Bear and the Pole Star in order, signified to him the course of the Lingual Artery. Sections of knots in Teak wood, so

commonly seen on furniture was a "typical tubercular" focus with a central caseating mass and a surrounding area of fibrosis. Imagine his surprising us one day by his ingenuous theory that attraction between man and woman was similar to that of Hydrogen and Chlorine atoms in a mixture of the two gases, where it did not matter which of the one combined with which of the other to form a HCl molecule. So also amongst men and women!

As he became more and more of a surgeon these flashes of pleasantry became rarer and rarer; and now that he had become famous in the Operating Room, his mind became anaesthetised to the beauties of Nature. Winding streams recalled the flow of lymph in fistulae. The prettiest collection of plants meant to him nothing but a mess of chlorophyll. The beautiful horizon as seen from the Marina reminded him of the edge of the hanging drop under the microscope. If he met a new person he would try to gauge his intelligence by the formation of his Frontal Convolutions. The crescent like moon brought once to his mind the picture of an M. T. gametocyte perched on the top of an R. B. C. An autumn moon shining through mist appeared like an ophthalmic cataract, and so on.

This temperament of his worked on our minds and we began to fear for his mental condition. My sister naturally looked very worried.

"How about asking some friends in to distract him?" I suggested. "I've tried that" sighed sister, "for the Ganapathi Festival one of the oldest friends had come to dinner. Kitti was positively dreadful. He would describe a Trephining operation he had just done. He illustrated it with an *Iddali* and a *Coochee*. Really at times, he is most annoying."

"Why not take him away for a holiday?"

"Oh! I've done that also, Puttu. We stayed in Ooty last month. Kitti was miserable. But when he had a wire to return and operate on Sir K., he was as happy as a prisoner on a reprieve".

I sympathised with Sis.

"Puttu" said Sissie coaxingly, "I wish you would take him away; he is so fond of you. Try to keep his mind away from his inevitable operations for about a week; will you?"

I promised to do my best.

When I proposed a tour in my new car, Kitti showed no enthusiasm; indeed if I had suggested a cheap trip to Tibet, he hardly could have made more excuses. However, I pressed him so persistently and Sissie abetted me with such vigour that at length he gave way. I very soon discovered that I was up against a tough proposition; I was trying to kindle his interest in one of our fond themes of old. When we came across a wood cutter engaged in lopping off superfluous branches from a tree Kitti shuddered and at once launched into a lecture on the horrors of Pre-Listerian era in Surgery.

I persevered and at length succeeded in rousing a mild interest on Race Horses. But unfortunately upon one of the horses I showed him, he noticed a ganglion which he excitedly told me belonged to the same species as one he had removed from a patient the previous month. Not before I had heard to a complete and detailed account of the operation could I draw him off.

The whole show threatened failure. I redoubled my efforts to divert his mind. I tried tennis; I tried pictures. It was all in vain; his mind swung back to its surgical Magnetic Meridian.

At length we happened to meet two of Kitti's friends, who were Doctors. I drew one of them aside and explained matters. After discussing for a long time he decided that a sudden shock or excitement might cure him. As examples he quoted the case of a dipsomaniac cured after an earthquake.

"Shall we try the effect of motion on Kitti?", he asked. I told him that my car was considered fast by some of the local

police, who had warned me. So we decided to invoke the aid of the Goddess of Pace on Kittu.

The road was good, and in spite of the extra weight of Kitt's two freinds, we easily touched seventy on the straight. What we touched on the bend was a car approaching us on the wrong side of the road, (i. e., on the right side.) carrying four male tourists.

* * * * *
Kittu and one friend at the back escaped, with a few cuts and bruises, but the remaining six of us were not so lucky. We were taken to the nearest hospital.

A week later Kittu sat on the foot of my bed, smiling and happy, holding in his hand a packet of X-Ray plates.

With the pride of a child displaying his album of Picture Post-cards he showed me broken fibulae, shattered clavicles, and fractured femurs all reduced, aligned, and plated with the skill of a master mind.

"It has been a topping Holiday," he exclaimed, enthusiastically grasping my uninjured Palm; "I can't thank you enough. We must have another tour next year."

— "PUTTU."

SPORTS

Madras Medical College Athletic Association.

The General Business Meeting—Was held in the second week of July with Lieut Col. Croly in the chair, when the various Captains and Committee Members were elected. The following are the results.

Cricket.

Captain—Mr. K. S. Bandhari.

Selection Committee—
 { Mr. E. M. V. Hensman.
 { Mr. C. E. Garson
 { Mr. P. T. Raghavachari

Hockey.

Captain—Mr. R. K. Chettur

Selection Committee—
 { Mr. E. M. V. Hensman
 { Mr. B. F. Lewin
 { Mr. E. Azariah

Football.

Captain—Mr. R. Krishnaswamy

Selection Committee—
 { Mr. B. Ananthaswamy Rao
 { Mr. S. Chandrasekariah.
 { Mr. E. M. V. Hensman

Tennis.

Joint Secretaries—
 { Mr. B. Ananthaswamy Rao
 { Miss. D. Venkatakrishna Rao.

At a subsequent Committee Meeting of the above office bearers with Dr. M. Subba Rao in the chair, it was decided to request the Government, through the Principal, to raise the scale of the sports fees, as the present sum was absolutely inadequate to meet the present day requirements, and cope with the existing high prices of sporting materials.

We are now glad to announce that these recommendations have been passed by the Government. But as the new scale of fees would come into force only from next year, it was resolved to appeal to the college staff and students to make good the inevitable deficit that must accrue this year, in spite of the most stringent and self-sacrificing economy on the part of the General Secretary and the captains.

Cricket.

Prospects :—We have this year a very fair and well balanced side, and we can look forward with confidence to the coming Inter-Collegiate tournament.

Our batting is perhaps our strongest point, the only criticism that can be levelled against it is, that there are far too many "hitters" and not enough of steady batsmen. But considering the fact that the Inter-Collegiate Matches are "all-one, day" events, it is perhaps more of a virtue than a vice.

Our bowling though not as strong as one would wish, does not lack in variety and Mr. Bandhari would do well to utilize to the full the large number of useful bowlers he has at his disposal.

As for our fielding, we have many very brilliant fields, but we also have a few "Gaps," if only these latter would strive to do their best, and at least stop the balls with some other part of their anatomy, if not with their hands, we can easily pride ourselves in being the best fielding side in Madras. Bad fielding is due more to slackness and want of enthusiasm, than to inability. Finally, unless our men put in more practice and get into form, the Presidency College may yet spring another surprise on us, as they did in August last.

Medical College Vs. the Presidency.

This practice match was played on the 15th of August on the grounds of the latter. We lost the toss and the Presidency College elected to bat.

Our bowling lacked sting, and but for Bhandari who captured 6 wickets for 69 runs, all the others were disappointing. Shunker who came in as a last charge kept a fairly decent length and captured 3 wickets for 65 runs.

Garson of whom much was expected was absolutely disappointing, while Dharmalingham was too nervous to bowl effectively. Bhasker Rao, and Ananthaswamy Rao were not tried as they were not in practice, while Lewin who had a "crooked" knee, and Hensman who could not be relieved from behind the stumps, were unable to join in the attack. Though the weather was very stifling and hot, yet there was no excuse for the slack fielding exhibited by a few of our players.

The Presidency College put up the big total of 203 runs towards which Nanjappah contributed a very well played 64 runs, Virasinghe a hard hit 56 runs and Kalyanaraman a laborious and lucky 53 runs. Our bowling as stated before, lacked sting as well as variety, while our fielding in spite of

lapses now and then, was retrieved by the brilliance of Chandrasekariah, Ananthaswamy Rao, Garson and Bhandar's in the outfield and Hensman at the wickets.

The Presidency innings closed at half-past three and as the stumps were to be drawn at 5-30, there was barely an hour and three quarter before us to make up their score. Hensman and Chandrasekariah again opened the innings, but before long Chandrasekariah was caught out, of a ball which smashed his thumb.

Bhandari who succeeded him was out to Madhavan with the score unchanged. With two of our best wickets down for 4 runs things looked very black indeed but with Garson and Hensman associated a very steady partnership ensued, in spite of a series of bowling changes the batsmen stuck firmly and brought up the score to 54, when Hensman whose patience seemed to have been at last exhausted, was yorked while attempting a big hit off Madhavan.—The retiring batsmen had played a very useful and faultless 28 runs and was mainly responsible for the stemming of the rout which had set in at the very beginning. It was now half past five, and the sky was very dark and over-cast, but at the request of the Presidency Captain it was decided to play a little longer, but as a matter of fact the match was continued on till 6 o'clock.

Bhasker now filled the vacancy and much to every one's disappointment he was caught out before he could do anything: a rot now set in and with Garson and Lewin run out and the rest quickly dismissed, a defeat seemed inevitable, but Dharmalingam and Ananthaswamy Rao stuck to their guns, and were batting confidently in spite of the fading light, when stumps were drawn for the day. Thus the match ended in a draw. The only other player besides Hensman who entered into double figures was Garson who played a most finished innings for his 22 runs, before he was run out.

Comment on this game is needless: it showed through and through, the want of practice on the part of our team. As for

the apparently poor batting display, we do not take it much to heart, as the light was very bad and as each player went in with the impression that the time was up and wanted to "slog!"

We have, as I have stated in the begining, perhaps the best balanced side among the colleges, and with a little more intensive training ought to keep up our unbroken record of championship which we have established in Inter-Collegiate Cricket during the last 6 years.

....."FENDER."

RESULTS

University of Madras

Medical Examinations, October, 1925

FIRST M. B. B. S. OR L. M. S. EXAMINATION.

FIRST CLASS.

Gnanaolivu, J. K.

Distinction in
Chemistry.

SECOND CLASS.

Balakrishnan, V.
Cartner, Dorothy, E. L.
Dharmarajan, C. K.
Ganapathy, K. M.
Gnanaswaran, S.
Jagannadhaswami, D.
Kanthamani, D.
Kondalaraya, K.
Krishnaswami, V.
Mammen Anna, T.
Martinus, W. E.
Mohamed Safiulla.
Narayana Menon, V.
Oommen, P. K.
Raghuramayya, G.
Rajagopalan, S.

Rajagopalan, T. R.
Raja Varma.
Ramaswami, K. S.
Ramaswami, S. S.
Sampath Iyengar, N. K.
Sankaran, C.
Sankaran, N. S.
Sripada Rao, M.
Sundaram, N.
Sundararajan, M. S.
Varughese, P. K.
Vergheze, Anna, K.
Visvanathan, B. S.
William, Eleanor C.
Aiyaswami, T. V.
Reddi, N.

QUALIFIED FOR FIRST L. M. S.

Edward, P. S.	Samuel, Mariam P.
Ganapati, K. V.	Sankararama Ayyar, R.
Gangadharan, N.	Sarangapani, S.
Jagannatharaju, M.	Satur, Josephine F.
Kanniyappan, K. G.	Selvanayagam, C. A. C.
Lushington, L. T.	Stevenage, V. N.
Marumakan Raja, K.	Sudarsanam, G. C.
Narayanaswami, G. R.	Vaidyanathan, J.
Nilakantan Nambiar, M. P.	Virayya, P.
Parameswaran Pillai, C. R.	William, M. J.
Ramachandran, K. V.	Joseph, C. A.
Rama Rao, S.	Narayanan Nair, V. R.
Ranga Rao, K.	

SECOND M.B. B.S. OR L.M. & S. EXAMINATION.

SECOND CLASS.

Chandrasekaran, T.	de Lemos, N. J. C.
Chockalingam, P. M.	Kameswara Rao, D.
Durai Raja, P. S.	Muhammed Abdul Hadi.
Eapen, A. J.	Muhammed Shafiuddin Mekhri.
Jesudoss, Florence K.	Paul, C. R.
Narayanamurthy, K.	Ramachandra Hebbar, K.
Paul, Sarah J.	Sundaram, C. S.
Ramayya, B. J.	Kamamma, B.
Savarirajan, J. C.	Koshi, Rebecca.
Sudarsanam, R.	Ratnavelu, M.
Venkatachalam, A. S.	Sivasankara Pillai, S.
Williams, Marjorie nee Johnson.	Subramanyan, N.
Srinivasan, L. V.	Kalyani Amma, M.
Bhimeswara Rao, K.	

QUALIFIED FOR SECOND L. M. & S.

Balaraman, D.	Krishna Wariyar, E.
* Bamford, Irene, M.	Kuriyan, K. T.
* Brahmanandam, P. V.	Mathai, Elachi.
* Chandra Rao, K.	Natesan, N.

These candidates obtained M. B. Marks in this Examination.

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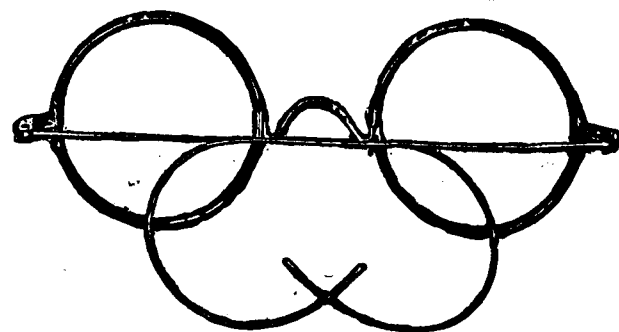
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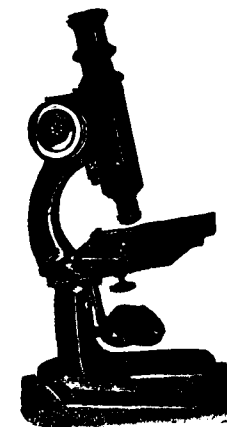
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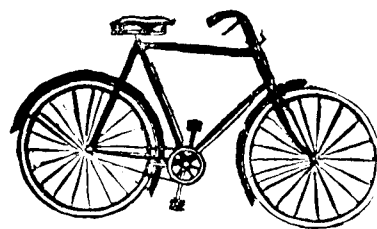
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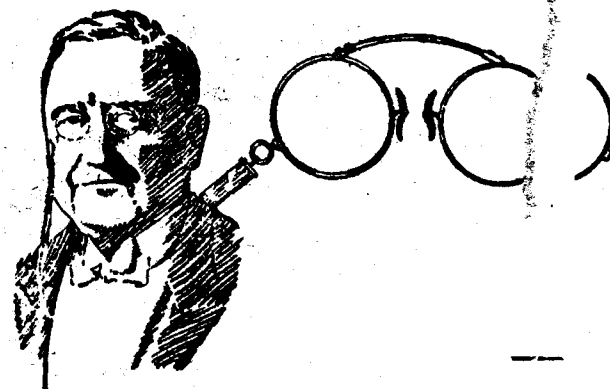
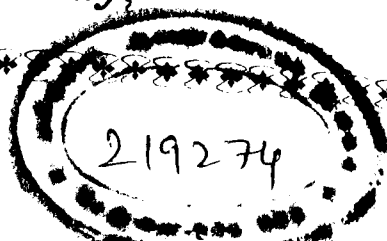
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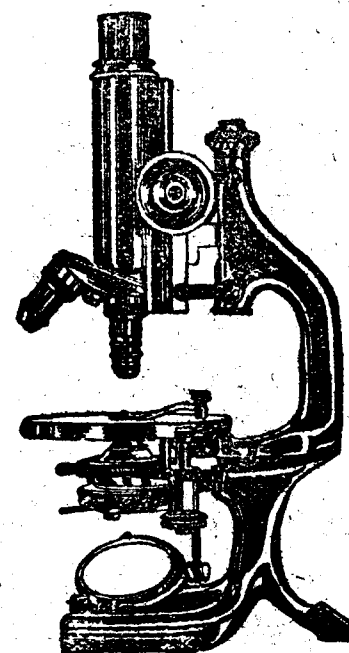
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